NATIONAL ENERGY BOARD

1991

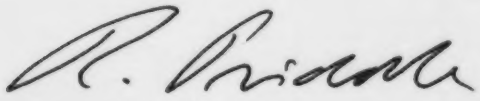
31 March 1992

The Honourable Jake Epp, P.C., M.P.
Minister of Energy, Mines and Resources
Ottawa, Ontario

Dear Mr. Epp,

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 1991 in accordance with the provisions of section 133 of the National Energy Board Act, R.S.C. 1985, c. N-7.

Yours sincerely,



R. Priddle,
Chairman

National Energy Board Profile

The National Energy Board is an independent federal regulatory tribunal that was created by an Act of Parliament on 2 November 1959. Since its creation, the Board has played an important role in the development of Canada's energy sector.

The Board's regulatory powers under the *National Energy Board Act* include the granting of authorizations for the exportation of oil, natural gas and electricity, the certification of interprovincial and international pipelines and designated interprovincial and international power lines, and the setting of tolls and tariffs for oil and gas pipelines under federal jurisdiction.

The Act also requires that the Board keep under review the Canadian supply of all major energy commodities, with emphasis on electricity, oil, natural gas, and the by-products derived from oil and natural gas, as well as the demand for Canadian energy in Canada and in export markets.

The Board has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*. In addition, Board inspectors have been appointed safety officers by the Minister of Labour to administer *Part II* of the *Canada Labour Code*.

In April 1991, regulatory responsibilities of the Canada Oil and Gas Lands Administration for oil and gas exploration and development in frontier lands were transferred to the Board.

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Certain information usually provided in past Annual Reports on the supply of and demand for oil, natural gas and electricity (under the heading of "Energy Developments" and also in certain Appendices) will be published separately at a later date.

Chairman's Letter 1991

The National Energy Board (the "Board") exists to serve the public interest of Canada. We do this through the provision of regulation which is directly relevant to the needs of our time, whilst at the same time anticipating and actively preparing for future needs.

Some of the Board's major areas of activity include:

- Certificating, in the public interest, international and interprovincial pipelines and international power lines;
- Protecting the environment during pipeline construction and subsequent operation;
- Ensuring the safety of oil and gas pipelines;
- Regulating the tolls of - and access to - pipelines which occupy monopoly positions in the marketplace;
- Licensing long-term exports of oil and gas which are found surplus to Canada's reasonably foreseeable requirements; and
- Permitting electricity exports over international power lines, having regard to their extra-provincial effects and to their impact on the environment.

In addition the Board has advisory functions, mainly related to keeping under review energy matters over which Parliament has jurisdiction and providing the Minister of Energy, Mines and Resources and other Departments with studies, reports and briefings. As part of its ongoing energy industry advisory function, the Board from time to time publishes baseline energy studies, such as its biennial *Canadian Energy Supply and Demand 1990-2010* report released in September 1991.

Responsibility for the Board's decision-taking rests with its Members. The *National Energy Board Act* provides for up to nine Members and up to six Temporary Members. As at year-end, the Board numbered eight Members and one Temporary Member; David B. Smith, Temporary Member, retired on September 21 and Martha Musgrove, Member, resigned effective October 1. Both had served the Board well and made important contributions to its work.

During 1991 the Board considered a wide variety of energy regulatory matters, ranging from electricity exports from New Brunswick to gas pipeline construction in northern British Columbia and including a report made at the Minister's request on the future utilisation of the Sarnia-Montreal oil pipeline. It held eight oral public hearings and sat for a total of fifty hearing days in five different locations across the country. The Board also dealt with hundreds of applications which it is authorized to handle without public hearing.

In late February the Government announced its intention to relocate the Board from Ottawa to Calgary. The Board's *Act* was subsequently amended to provide that its head office shall be in Calgary, Alberta, and that Members shall reside in, or within a reasonable commuting distance of, Calgary. The Board started operations in Calgary on September 3, 1991 and its new headquarters were officially opened on November 1.

In March the Government announced that oil and gas regulation in the North, formerly carried out by the Canada Oil and Gas Lands Administration ("COGLA"), would in future be the Board's responsibility upon enactment of necessary legislative changes.

At the beginning of the year, the Board's staff numbered some 320, plus another 55 who were at that time COGLA personnel. Regrettably, many valued employees were unable to move with the Board to Calgary. By year-end, the great majority had found other employment, generally in the Public Service in Ottawa. Fortunately, the Board was able to retain a "critical mass" of experienced staff after the move and by the end of the 1991/92 fiscal year we expect to have successfully recruited skilled replacements for nearly all open positions.

The COGLA merger brought to the Board additional environmental competence and responsibility. It has used the opportunity to create an Environment Directorate which has equal status with Directorates dealing with, for example, Pipeline Regulation and Energy Regulation. This reflects the importance which the Board attaches to its environmental protection roles.

Understandably, some disruption has been caused by the Board's relocation. In operational terms, we lost about two months' hearing time, resuming our fall hearing schedule in mid-November rather than in mid-September. However, the Board's weekly meetings and decision-taking continued without interruption.

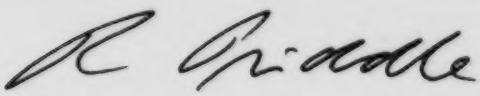
I am very appreciative of the efforts made by Board Members and staff to maintain our operations while at the same time coping with the personal and work-place stresses and disruption which must inevitably accompany such a major move. I would also like to place on record our gratitude for the advice and assistance we received from federal government departments and agencies and from the Calgary community in effecting the move in such a short space of time and at least cost.

At year-end, the Board was settling into its new Calgary home and vigorously attacking an ambitious schedule involving - among other things - ten oral public hearings between November 1991 and May 1992, as well as four ongoing written proceedings.

The Board has always been conscious of its national character. It will function in Calgary with the same authority, independence and fairness as it did in Ottawa.

The Board is aware too that it must maintain a comprehensive understanding of all energy matters and interests. It will do so while discharging appropriately its regulatory and advisory responsibilities.

Finally, the Board is committed to serving the Canadian public effectively, but with due regard to economy and efficiency, and of course in both official languages.



R. Priddle

The Year at a Glance

Highlights of Major Activities during 1991

Hearings

During 1991 the Board...

- conducted eight oral public hearings for a total of fifty hearing days.
- conducted four public hearings by way of written submission.

Natural Gas

During 1991 the Board...

- issued 16 natural gas export licences for a total of some 52.7 billion cubic metres (1.86 trillion cubic feet). The licences were issued to:

  Canadian Occidental Petroleum Limited
  Dartmouth Power Associates, Limited Partnership
  Encogen Four Partners, Limited Partnership
  Esso Resources Canada Limited
  FSC Resources Limited
  Fulton Cogeneration Associates
  Indeck Gas Supply Corporation - Indeck-Corinth
  Indeck Gas Supply Corporation - Indeck-Ilion
  Kamine/Besicorp Carthage, Limited Partnership
  Kamine/Besicorp South Glens Falls, Limited Partnership
  New England Power Company
  Pawtucket Power Associates, Limited Partnership
  ProGas Limited
  Selkirk Cogen Partners, Limited Partnership
  Unigas Corporation
  Western Gas Marketing Limited.

- approved amendments to 14 existing gas export licences.
- issued 107 short-term orders either for the export, the import or the transit movement of natural gas.
- issued 50 orders for the export of propane and 42 orders for the export of butanes.

- decided to conduct a review on two of the components (the Complaints Procedure and the Other Public Interest Considerations) of the Market-Based Procedure as part of the Board's ongoing efforts to maintain and improve the clarity and effectiveness of its regulatory process.

- amended the procedures for natural gas exports and import by order.

Oil

During 1991 the Board...

- issued 122 orders for the export of crude oil and petroleum products.

- published a report entitled *Exports of Petroleum Products in 1990.*

Electricity

During 1991 the Board...

- issued six permits to **The New Brunswick Electric Power Commission** which will allow the utility to continue exporting firm and interruptible electricity to Maine, firm electricity to Massachusetts and firm electricity wheeled through Maine and returned to New Brunswick.

- issued five permits to **Ontario Hydro** which will allow the utility to continue exporting firm and interruptible electricity to **Consumers Power Company, The Detroit Edison Company, Niagara Mohawk Power Corporation, The Power Authority of the State of New York**, the **New York Power Pool, Minnesota Power and Light Company, General Public Utilities Corporation** and the **State of Vermont.**

- commenced the examination of an application by the **British Columbia Hydro and Power Authority** and the **British Columbia Power Exchange Corporation** for permits to export electricity to the **Bonneville Power Administration** and to other potential customers who are members of the **Western System Coordinating Council** and the **Northwest Power Pool.**

- commenced the examination of an application by the **Manitoba Hydro-Electric Board** for three permits to export electricity to **Northern States Power Company** and **United Power Association in Minnesota**.

- amended 4 export licences, one order, three permits and one international power line certificate.

- issued a further 6 export permits, to make a total of 17 issued.

- continued its study on interprovincial electricity trade.

Pipelines

During 1991 the Board...

- approved a $1.8 billion expansion of the **TransCanada PipeLines Limited** system, comprising 1 190 kilometres of looping and pipeline and 17 compressor units.
- granted a certificate to **Westcoast Energy Inc.** to construct the 48-kilometre Adsett pipeline at an estimated cost of $8.3 million.
- denied an application by **TransCanada PipeLines Limited** to construct a pipeline extension known as the "Gananoque Extension".
- denied an application by **TransCanada PipeLines Limited** to construct a pipeline extension known as the "Blackhorse Extension".
- approved an application by **Interprovincial Pipe Line Company** to construct underground facilities for natural gas liquids near its existing terminal in Edmonton, Alberta, but denied the toll methodology requested.
- held a hearing on an application by **TransCanada PipeLines Limited** to construct 301 kilometres of pipeline looping as well as the relocation of three portable compressor units at an estimated cost of $389 million.
- commenced a hearing, by means of written submissions, on an application by **Alberta Natural Gas Ltd.** to expand its system by adding and modifying the compression facilities on the company's three existing compressor stations in southern British Columbia.

Toll Regulation

During 1991 the Board...

- established new tolls that **TransCanada PipeLines Limited** may charge for the transportation of natural gas at 15.97 % higher than the average 1989 tolls, effective 1 January 1991.
- approved an 8 % increase in the tolls that **Interprovincial Pipe Line Company** may charge for transporting crude oil, natural gas liquids and petroleum products beginning 1 January 1991.
- approved a 9.8 % increase in the tolls that **Trans-Northern Pipelines Inc.** may charge for the transportation of refined petroleum products beginning 1 December 1990.
- approved a 6.4 % average increase in the tolls that **Trans Mountain Pipe Line Company Ltd.** may charge for the transportation of oil and petroleum products beginning 1 January 1991.

- approved a 7.2 % increase in tolls, effective 1 January 1991, and a 3 % increase in tolls, effective 1 January 1992, that **Trans Québec & Maritimes Pipeline Inc.** may charge for the transportation of natural gas.

- approved a new tariff that will be used by **Alberta Natural Gas Ltd.** that will ensure that prospective and existing shippers are given fair and equitable access to the company's transportation service.

- approved **Westcoast Energy Inc.'s** queuing procedures.

- issued new orders to **Interprovincial Pipe Line Company, Trans Mountain Pipe Line Company Ltd.** and **Trans-Northern Pipelines Inc.** amending the procedures under which their toll applications will be processed by the Board.

- commenced a hearing on an application by **Interprovincial Pipe Line Company** to increase the tolls it may charge, beginning 1 January 1992, for transporting crude oil, natural gas liquids and petroleum products.

Environment

During 1991 the Board...

- in accordance with the *Environmental Assessment and Review Process Guidelines Order*, conducted environmental screenings of eighteen natural gas and electricity export applications and at year-end was considering the environmental impact of five additional export applications.

- conducted over 82 environmental screenings of pipeline facilities, ranging from facility modifications to major pipeline looping and transmission facilities.

- carried out periodic environmental inspections of the construction of **TransCanada PipeLines Limited's** 1991 looping projects across Canada and **Westcoast Energy Inc.'s** pipeline construction in northeastern British Columbia.

- conducted periodic inspections of 10 operational pipeline systems in eastern Canada to ensure that rights-of-way were being maintained in an environmentally acceptable manner.

- conducted periodic inspections of 4 polychlorinated biphenyl (PCB) waste storage sites to insure that the sites were in compliance with the federal *Interim Order Respecting the Storage of Wastes Containing Chlorobiphenyls*.

- distributed approximately 2 500 English and 900 French copies of the Board's revised guide to *Excavation and Construction Near Pipelines* (published in March 1991) to pipeline companies, contractors, utility owners, technicians, consultants and other interested third parties.

Advisory Functions

- The Board conducted a study, at the request of the Minister of Energy, Mines and Resources, on the future use of **Interprovincial Pipe Line Company's** Sarnia to Montreal pipeline.

Energy Studies

- The Board issued a report entitled *Canadian Energy Supply and Demand, 1990-2010.*

Legislation and Regulations

- *Cost Recovery Regulations* became effective on 1 January 1991.
- The *National Energy Board Act* was amended to implement the relocation of the Board's Head Office to Calgary, Alberta.
- The *National Energy Board Part VI Regulations* (the Part VI Regulations) are being amended to reflect the new *Canadian Electricity Policy* and the Market-Based Procedure for considering gas export licence applications.
- The process of creating and amending regulations pertaining to frontier oil and gas activities, as provided for under *Oil and Gas Production and Conservation Act*, continues with the Board.

Legal Actions

- In October and December 1990, **Hydro-Québec, le Procureur général du Québec** and the **General Council of the Crees (of Quebec)** filed with the Federal Court of Appeal applications for leave to appeal certain aspects of the Board's decision to issue licences to Hydro-Québec for exports of firm electricity to the **Vermont Joint Owners** and the **New York Power Authority**. In July the court denied the Crees' appeal and allowed the appeals by **le Procureur général** and **Hydro-Québec**. In October, the **Crees** and the **Cree Regional Authority** filed an application for leave to appeal with the Supreme Court of Canada.
- In January, the **Treaty 8 Tribal Association** and the **Doig River Indian Band** filed with the Federal Court of Appeal an application for leave to appeal the Board's decision to approve an application by **Canadian Hunter Exploration Ltd.** to construct three segments of interprovincial pipeline spanning the British Columbia/Alberta border. In May the Court granted the leave to appeal and the appeal is expected to be heard in early 1992.

- In March, **Trans-Northern Pipelines Inc.** filed an application with the Federal Court of Appeal for leave to appeal the Board's decision affirming Order MO-22-89 which ordered **Trans-Northern** to relocate a section of pipeline located under the St. Eustache Mall. In May, the Court heard the motion orally and dismissed the application on the same day.

- In April, **Niagara Mohawk Power Corporation** and **Western Gas Marketing Limited/TransCanada PipeLines Limited** filed a notice with the Federal Court of Appeal seeking an order granting them leave to file an application for leave to appeal 30 days following the release of the Board's Reasons for Decision on the Gananoque Extension. In January and February 1992 **TransCanada, Western Gas** and **Niagara Mohawk** withdrew their motions

- In June, **Altamont Gas Transmission Company** filed an application in the Federal Court Trial Division to quash a February decision of the Board and the Designated Officer of the Northern Pipeline Agency in which it was determined that a certain application by **Foothills Pipelines Ltd.** with the Northern Pipeline Agency was properly before the Agency and quashing a decision of the Board amending condition 12 of Schedule III of the *Northern Pipeline Act*. In December **Altamont** withdrew its application with the Court.

- In June, the **Prophet River Indian Band** filed an application with the Federal Court of Appeal for leave to appeal a May decision of the Board denying an application by the **Band** to review the Board's decision regarding an Environmental Screening Document prepared with respect to **Westcoast Energy Inc.'s** Adsett pipeline.

- In August, **CNG Transmission Corporation** filed a motion with the Federal Court Trial Division seeking leave to appeal the Board's August decision to review its decision to deny the Blackhorse Extension. In October, the Court ordered that the Board discontinue its review and that Messrs. Priddle and Fredette refrain from participating in any subsequent review that might be conducted regarding the Blackhorse decision.

Organization and Administration

- On 26 February 1991 the Government announced the relocation of the Board to Calgary.

- On 2 April 1991 approximately 55 staff members of the Canada Oil and Gas Lands Administration were transferred to the Board.

- A new Environment Directorate was established at the Board, combining all functions and responsibilities of the Environmental Branch of the National Energy Board and those of the Environmental Protection Branch of the Canada Oil and Gas Lands Administration. These responsibilities arise out of the *National Energy Board Act*, the *Oil and Gas Production and Conservation Act*, and the *Canadian Petroleum Resources Act*.

- The Board relocated from Ottawa to Calgary, with the new Calgary Head Office commencing full operation on 3 September.

Table 1

Highlights of the Pipeline Companies Under National Energy Board Jurisdiction

	1991 Rate Base[a] ($000,000)	1991 Revenue Requirement ($000,000)	Length (Including Loops) (km)	1991 Actual Throughput ($10^6 m^3$)
Group 1 Gas(b)				
Alberta Natural Gas Company Ltd.	27	28	175	14,528
Foothills Pipe Lines Ltd.	697	168	850	12,946
Trans Québec & Maritimes Pipeline Inc.	346	74	341	3,025
TransCanada PipeLines Limited	3,689	1,224	11,369	45,413
Westcoast Energy Inc.	902	304	4,554	13,512
Group 1 Oil				**($10^3 m^3$)**
Cochin Pipe Lines Ltd.	42	30	1,125	4,166
Interprovincial Pipe Line Inc.	654	313	6,495	77,067
Interprovincial Pipe Line (NW) Ltd.	278	73	868	1,940
Trans Mountain Pipe Line Company Ltd.	163	88	1,328	10,633
Trans-Northern Pipelines Inc.	30	29	847	9,546
Group 2 Gas and Oil				
Total	N/A	N/A	3,666	N/A

(a) Net plant or equivalent, including working capital.
(b) Group 1 consists of the ten major pipeline companies, for which finanacial data are based on preliminary estimates obtained from those companies. Group 2 is comprised of the remaining 43 smaller pipeline companies which are regulated on a complaint basis only and for which financial data are not available.

Board Activities

Hearings, Inquiries and Reviews

During 1991, the Board conducted eight oral hearings in locations such as Vancouver, Fort Nelson, Calgary, Niagara Falls and Ottawa for a total of fifty hearing days. The Board also conducted four hearings by way of written submissions.

This section summarizes the major matters dealt with in 1991 following public hearings, inquiries and reviews for which decisions have been issued or are still pending.

Natural Gas Exports

Gas Export Applications Approved as Part of the GH-5-89 Hearing

During the GH-5-89 hearing, the Board considered 15 applications for natural gas export licences. In April 1991 the Board approved the following exports:

Canadian Occidental Petroleum Limited was issued a licence to export some 433 400 cubic metres (15.3 million cubic feet) of natural gas per day at Niagara Falls, Ontario for the period ending 31 October 2006. The gas will be used to fuel a cogeneration facility to be located near Old Bethage, New York.

Encogen Four Partners, Limited Partnership was issued a licence to export some 424 900 cubic metres (15 million cubic feet) of natural gas per day at Niagara Falls, Ontario for a period of 15 years. The gas will be used to fuel a cogeneration facility to be located in Buffalo, New York.

Esso Resources Canada Limited was issued a licence to export some 991 500 cubic metres (35 million cubic feet) of natural gas per day at Iroquois, Ontario for the period ending 31 October 2006. The gas will be used as system supply by the **Boston Gas Company** for use by its customers in The City of Boston and 73 other cities and towns in eastern Massachusetts.

FSC Resources Limited was issued a licence to export some 453 000 cubic metres (16 million cubic feet) of natural gas per day at Niagara Falls, Ontario for the period ending 31 October 2006. The gas will be used to fuel a cogeneration facility to be located in north east Pennsylvania.

Fulton Cogeneration Associates was issued a licence to export some 326 200 cubic metres (11.5 million cubic feet) of natural gas per day for the period 1 November 1991 to 31 October 2001, then to export some 160 000 cubic metres

(5.7 million cubic feet) of gas per day for the period 1 November 2001 to 31 October 2005. The exports would be made at Chippawa, Ontario. The gas will be used to fuel a cogeneration facility to be located in Fulton, New York.

Indeck Gas Supply Corporation was issued two licences to export natural gas. The first licence authorizes **Indeck** to export some 459 000 cubic metres (16.3 million cubic feet) of natural gas per day commencing on first deliveries and continuing for 15 years. The gas will be used to fuel a cogeneration facility to be located in Corinth, New York. The second licence authorizes **Indeck** to export some 210 000 cubic metres (7.5 million cubic feet) of natural gas per day commencing on first deliveries and continuing for 15 years. The gas will be used to fuel a cogeneration facility to be located in Ilion, New York. For both licences, the exports would be made at Chippawa, Ontario.

Kamine/Besicorp Carthage, Limited Partnership was issued a licence to export some 402 250 cubic metres (14.2 million cubic feet) of natural gas per day at Iroquois, Ontario for the period ending 31 October 2006. The gas will be used to fuel a cogeneration facility to be located in Carthage, New York.

Kamine/Besicorp South Glens Falls, Limited Partnership was issued a licence to export some 402 250 cubic metres (14.2 million cubic feet) of natural gas per day at Iroquois, Ontario for the period ending 31 October 2006. The gas will be used to fuel a cogeneration facility to be located in South Glenns Falls, New York.

New England Power Company was issued a licence to export some 1 700 000 cubic metres (60 million cubic feet) of natural gas per day at Iroquois, Ontario commencing on first deliveries and continuing for 15 years. The gas will be used by **New England Power Company** and its affiliates to generate electricity. In particular, it will displace fuel oil currently being burned at the Brayton Point Station in Somerset, Massachusetts and it will be used to fuel three electric power generation units in Providence, Rhode Island.

Pawtucket Power Associates, Limited Partnership was issued a licence to export some 362 000 cubic metres (12.8 million cubic feet) of natural gas per day at Iroquois, Ontario for the period ending 31 October 2006. The gas will be used to fuel a cogeneration facility to be located near Pawtucket, Rhode Island.

ProGas Limited was issued a licence to export some 708 200 cubic metres (25 million cubic feet) of natural gas per day at Iroquois, Ontario commencing on first deliveries and continuing for 15 years. The gas will be used to fuel a cogeneration facility to be located at Springfield, Massachusetts.

Selkirk Cogen Partners, Limited Partnership was issued a licence to export some 651 500 cubic metres (23 million cubic feet) of natural gas per day at Iroquois, Ontario for the period commencing on first deliveries and continuing for 15 years and 9 months. The gas will be used to fuel a cogeneration facility to be located in Selkirk, New York.

Unigas Corporation was issued a licence to export some 453 200 cubic metres (16 million cubic feet) of natural gas per day at Chippawa, Ontario commencing on first deliveries and continuing for 10 years. The gas will be used as system supply by **Rochester Gas and Electric Corporation**, which is a gas distribution company and electric utility serving Rochester and surrounding counties in western New York State.

Western Gas Marketing Limited was issued a licence to export some 283 200 cubic metres (10 million cubic feet) of natural gas per day at Niagara Falls, Ontario commencing on first deliveries and continuing for 15 years. The gas will be used as system supply by the **Elizabethtown Gas Company**, which is a local distribution company serving customers in central and northwestern New Jersey.

(For more information refer to **TransCanada PipeLines Limited - 1991/1992 Facilities and Associated Gas Export Licences - GH-5-89** on page 25 in the *Pipeline Facilities* Section)

Esso Resources Canada Ltd.; Gulf Canada Resources Ltd.; Shell Canada Limited - Licences - GH-10-88

In October 1989, the Board issued licences to **Esso**, **Gulf** and **Shell** to export natural gas from the Mackenzie Delta.

On 8 February 1990, the Minister of Energy, Mines and Resources requested clarification on how the Board complied or would comply with the *Environmental Assessment and Review Process Guidelines Order* in arriving at its decision to issue the licences to **Esso**, **Gulf** and **Shell**. In compliance with the *EARP Guidelines Order*, the Board decided to conduct an environmental screening of the applications and held a hearing by way of written submission. On 15 February 1990 the Board issued Hearing Order GHW-2-90, inviting interested parties to provide their comments.

Various submissions were received and are currently under review. The Board expects to issue its decision on this matter in 1992.

Dartmouth Power Associates Limited Partnership - Natural Gas Export - GH-9-90

The Board approved an application by **Dartmouth Power** for a licence to export 400 900 cubic metres (11.4 million cubic feet) of natural gas per day near Iroquois, Ontario over a 15-year period beginning 1 November 1992. The gas will be used to fuel a new gas-fired independent power generating facility in Dartmouth, Massachusetts.

Dartmouth had requested a 20-year licence to export some 2.9 billion cubic metres (103.4 billion cubic feet) of natural gas. The Board approved the licence

for 15 years for some 2.2 billion cubic metres (77.5 billion cubic feet) instead of 20 years because it was not satisfied that the evidence submitted by **Dartmouth** with regard to supply and the commercial necessity for the applied-for licence term was adequate to support the issuance of a 20-year export licence.

The Board held a public hearing on 19 and 20 February 1991 in Ottawa to consider the application.

The Board also conducted an environmental screening of the application.

L&J Energy Systems, Inc. - Amendment to Licence GL-148 - GH-2-91

The Board approved an application from **L&J Energy** to amend its natural gas export Licence GL-148 so as to extend the termination date by three years and to increase the term quantity from 1 456 million cubic metres (51.4 billion cubic feet) to 1 815 million cubic metres (64.1 billion cubic feet).

The application was considered at a public hearing held in Ottawa on 7 May 1991.

The Board also conducted an environmental screening of the application.

Various Applications for Gas Export Licences - GH-3-91

The Board held a public hearing on 25, 26 and 27 June 1991 in Calgary on applications from various companies for licences to export natural gas.

The applications received were from:

Amoco Canada Petroleum Company Ltd.
Canadian Occidental Petroleum Ltd.
Mobil Oil Canada, Ltd.
North Canadian Marketing Inc. and East Georgia Cogeneration (Vermont) Limited Partnership
ProGas Limited
Shell Canada Limited
Unigas Corporation
Western Gas Marketing Limited
Western Gas Marketing Limited, as agent for Northern Minnesota Utilities, a Division of Utilicorp United Inc.

Amoco requested a licence to export 424 900 cubic metres (15.0 million cubic feet) of natural gas per day to **Northern States Power Company**, Wisconsin from 1 November 1992 to 31 October 2002. **Northern States** serves markets in western Wisconsin and the upper peninsula of Michigan.

Canadian Occidental requested a licence to export 212 500 cubic metres (7.5 million cubic feet) of natural gas per day to **Northern States** from 1 November 1992 to 31 October 2002.

Mobil requested a licence to export 563 500 cubic metres (20 million cubic feet) of natural gas per day to **Northern Natural Gas Company, a Division of Enron Corp** from the date of Governor in Council approval to 31 October 2000. **Northern Natural** is an interstate pipeline company serving primarily local distribution companies in Illinois, Iowa, Michigan, Minnesota, South Dakota and Wisconsin.

North Canadian/East Georgia Cogeneration requested a licence to export 192 500 cubic metres (6.8 million cubic feet) of natural gas per day from 1 November 1992 to 31 October 2012. The gas would be used by **East Georgia Cogeneration** in a cogeneration plant to be constructed in East Georgia, Vermont.

ProGas filed two applications for licences to export natural gas to the United States. One application was for a licence to export 339 900 cubic metres (12.0 million cubic feet) of natural gas per day to **Lockport Energy Associates, L.P.** from 1 November 1992 to 31 October 2007. The gas will be used by **Lockport** at a cogeneration facility to be constructed in Lockport, New York. The other application was for a licence to export 212 500 cubic metres (7.5 million cubic feet) of natural gas per day to **Northern States** from 1 November 1992 to 31 October 2002.

Shell applied for two 15-year licences to export natural gas to the U.S. Midwest from 1 November 1991 to 31 October 2006. The first licence requested was for the export of 580 700 cubic metres (20.5 million cubic feet) of natural gas per day to **Salmon Resources Ltd.** for resale to **Midwest Gas, A Division of Iowa Public Service Company**. **Midwest Gas** is a natural gas utility serving customers in Minnesota, Iowa, South Dakota and Nebraska. The other licence requested was for the export of 277 600 cubic metres (9.8 million cubic feet) of natural gas per day to **Salmon Resources** for resale to **Enron Gas Marketing, Inc.**

Unigas requested a licence to export 2 820.000 cubic metres (100.0 million cubic feet) of natural gas per day to **Northern Natural** from 1 November 1991 to 1 November 2001.

Western Gas Marketing Limited filed an application for three licences to export natural gas to **Northern Natural** as follows:

- 1 345 600 cubic metres (47.5 million cubic feet) per day from the first day of the first full month following Governor in Council approval to 31 October 2001;

- 1 416 400 cubic metres (50 million cubic feet) from the first day of the first full month following Governor in Council approval to 31 March 1996;

- 708 200 cubic metres (25.0 million cubic feet) per day from the first day of the first full month following Governor in Council approval to 31 October 2001;

Western Gas also filed two export applications for additional licences to export natural gas to the United States. One application was for the export of 283 300 cubic metres (10.0 million cubic feet) per day to **Northern Minnesota Utilities** from 1 November 1991 to 1 May 2001. **Northern Minnesota Utilities** is a local distribution company serving 46 communities in northern Minnesota. The second application was for a licence to export 906 500 cubic metres (32.0 million cubic feet) per day to **Vermont Gas Systems, Inc**. from 1 November 1991 to 31 October 2006. **Vermont Gas** is a transmission and distribution company serving customers in northwestern Vermont.

Western Gas as agent for Northern Minnesota Utilities also applied to export 1 059 500 cubic metres (37.4 million cubic feet) of natural gas per day to **Northern Minnesota Utilities** from 1 November 1991 to 31 October 2002. The gas will be exported at Sprague, Manitoba, some will subsequently be imported at Rainy River, Ontario, then delivered to Fort Frances, Ontario, for re-export. The gas will be delivered to customers in western Minnesota and to **Boise Cascade** at International Falls, Minnesota.

The Board conducted an environmental screening of the proposed exports by means of written submission.

The Board expects to issue its Reasons for Decision in February 1992.

North Canadian Oils Ltd. and Poco Petroleums Ltd. - Natural Gas Export - GH-7-90

The Board held a hearing on 23 and 24 October 1990 in Vancouver on an application by **North Canadian Oils** and two applications by **Poco** for licences to export natural gas.

North Canadian Oils proposed to export up to 198 100 cubic metres (7.0 million cubic feet) of natural gas per day at Emerson, Manitoba over a 15-year period beginning 1 January 1991. The gas would be sold to **Ada Cogeneration Limited Partnership** for use at its cogeneration plant in Ada, Michigan.

In the light of information received from **North Canadian Oils** concerning a possible change in supply arrangements for the Ada project, the Board decided on 14 January 1991 to suspend deliberation on this application until all arrangements are finalized. **North Canadian Oils** was directed to inform the Board when agreements are reached with **Ada** and any other supplier to the project, as well as to file copies of the agreements with the Board and to serve them on all interested parties. It is the Board's intention to issue further

directions on procedure and reopen the hearing to consider this new information once all arrangements are in place.

In December 1991 the Board approved two licences to **Poco**.

The first licence, which will commence upon Governor in Council approval and end on 31 October 1999, authorizes **Poco** to export some 424 900 cubic metres (15.0 million cubic feet) of natural gas per day at Huntingdon, British Columbia. The gas will be used by **Washington Natural Gas Company**, a local distribution company serving residential, commercial and small industrial customers in the Puget Sound, Washington area.

The second licence, which will commence upon Governor in Council approval and end on 31 October 1999, authorizes **Poco** to export some 566 600 cubic metres (20.0 million cubic feet) of natural gas per day also at Huntingdon. The gas will be sold to **IGI Resources, Inc.** which in turn will resell the gas to **Intermountain Gas Company** and **C.P. National Corporation. Intermountain** is a local distribution company serving residential, commercial and industrial customers in southern Idaho. **C.P. National** is a local distribution company serving residential, commercial and industrial customers in the states of Oregon, California and Nevada.

Canadian Petroleum Association - Review of Licence GL-111

In an application dated 29 May, the **Canadian Petroleum Association** requested that the Board review its decision in GH-5-88 with respect to the issuance of gas export Licence GL-111 issued to **Alberta and Southern Gas Co. Ltd. Alberta and Southern** currently holds licence GL-99 which expires on 31 October 1994. Licence GL-111 commences on 1 November 1994 and allows **Alberta and Southern** to export up to 116.4 billion cubic metres (4.1 trillion cubic feet) of natural gas between 1 November 1994 and 31 October 2005.

In its application, the **CPA** stated among other things that current actions by the **CPUC** to implement capacity brokering on the **Pacific Gas Transmission Company** pipeline system are inconsistent with the Board's decision in GH-5-88 since they "would abrogate the freely negotiated contractual undertakings upon which the GH-5-88 decision was based, would be contrary to the evidence that was relied on by the Board in reaching its decision, and would be inconsistent with the principles of Canadian and United States energy policy which formed the basis of this decision."

The **CPA** amended its original application on 27 November 1991 following a decision dated 6 November by the **CPUC** which directed **Pacific Gas and Electric Company** to covert its gas sales service on the **Pacific Gas Transmission** system to transportation service and to subsequently broker a portion of that capacity. The **CPA** said that the decision effectively directs **Pacific Gas and Electric Company** to terminate all long-term contracts with Alberta producers by October 1992.

In amending its original application, the **CPA** asked the Board to immediately vary all short-term export orders to add a condition that prohibits deliveries into the pipeline system of **Pacific Gas Transmission** of any Canadian gas destined for utilization in the northern California market that is not gas presently contracted by **Alberta and Southern** for sale to **Pacific Gas Transmission**. The **CPA** added that the condition should continue in full force and effect until the Board has held a hearing, made its findings and rendered a decision in respect to its application.

The Board decided in December to hold a public hearing commencing in February 1992 on the matter of gas exports to California. The Board also decided to immediately conduct a written hearing on interim measures which could be taken with respect to gas export orders and transportation access on **Alberta Natural Gas Co. Ltd's** pipeline system related to the displacement of licensed gas to the Northern California market.

Proposed Changes to the Application of the Market-Based Procedure – Proceeding GHW-1-91

In August 1991, the Board proposed some changes to the way in which it applies the Market-Based Procedure with respect to the licensing of natural gas exports, and requested comments from interested parties on these proposals. The proposals were primarily intended to streamline the hearing process by ensuring that only those issues which are germane to the public interest be addressed in public hearings. In addition, the Board clarified the way in which the Complaints Procedure is intended to work and proposed some minor changes to the pre-hearing process.

Interested parties' initial comments on the Board's proposals were submitted in mid-December. The Board expects to release a Decision in the spring of 1992 as to how the Market-Based Procedure is to be applied.

Electricity Exports

New Brunswick Power - Two Applications for Renewal of Export Authorizations - EW-1-90/EW-2-90

In January the Board approved two applications from **New Brunswick Power** requesting approval of seven licences to replace existing licences that were soon to expire and authorization of one new transaction.

The Board decided to consider both applications and sought the views of interested parties on whether to issue permits granting the requested authorizations without public hearing or to recommend that the Governor in Council designate the applications for licensing, thus necessitating a public hearing. The Board's review of the applications included an environmental screening.

Two of the requested authorizations were for carrier transfers through New Brunswick of electricity generated in the United States for consumption in the United States. The Board decided that the "nature and circumstances of such carrier transfers need not be subject to the Board's current export regulations".

Under the issued permits, **New Brunswick Power** will be able to make the following exports:

- up to 100 megawatts of firm power and 876 gigawatt hours of firm energy in any consecutive 12-month period from the Point Lepreau generating station to **Massachusetts Municipal Wholesale Electric Company** between 1 February 1991 and 31 October 1993 and 50 megawatts and 438 gigawatt hours of firm energy in any consecutive 12-month period between 1 November 1991 and 31 October 1994;

- up to 6 482 gigawatt hours of interruptible energy in any consecutive 12-month period to **Maine Electric Power Company**, between 1 February 1991 and 31 October 2000;

- up to 400 gigawatt hours of interruptible energy in any consecutive 12-month period to **Maine Public Service Company** between 1 February 1991 and 31 October 2000;

- up to 50 megawatts of firm power and 250 gigawatt hours of firm energy in any consecutive 12-month period to be wheeled by **Maine Public Service Company** through the State of Maine and returned to New Brunswick between 1 February 1991 and 31 July 2002;

- up to 179 gigawatt hours of interruptible energy in any consecutive 12-month period to **Eastern Maine Electric Cooperative, Inc.** between 1 February 1991 and 31 October 2000; and

- up to 23 megawatts of firm power and 201.48 gigawatt hours of firm energy in any consecutive 12-month period to **Eastern Maine Electric Cooperative, Inc**. between 1 February 1991 and 31 October 1993 and 21.5 megawatts and 188.34 gigawatt hours of firm energy in any consecutive 12-month period between 1 November 1993 and 31 October 1994. Up to 20 megawatts of this power will come from **New Brunswick Power's** thermal generation plant and the remainder from the Point Lepreau plant.

Ontario Hydro - Renewal of Export Authorizations - EW-3-90

In April, the Board approved an application from **Ontario Hydro** requesting the renewal of five export authorizations. The renewal allowed the utility to continue exporting interruptible and firm electricity in accordance with existing agreements to **The Consumers Power Company, The Detroit Edison Company, General Public Utilities, Minnesota Power, the New York Power Pool, Niagara Mohawk Power Corporation, the Power Authority of the State of New York,** and the **State of Vermont**.

After considering the submissions received from various interested parties, the Board issued four permits with the terms requested by **Ontario Hydro**, and a fifth for exports of interruptible energy with a three year term instead of the requested 15 year term.

Under the issued permits, **Ontario Hydro** will be able to make the following exports:

- up to 15 000 gigawatt hours of interruptible energy (of which no more than 10 000 gigawatt hours may be generated by fossil-fired facilities) in any 12-month period to **Consumers Power, Detroit Edison, Niagara Mohawk, Power Authority of the State of New York, New York Power Pool, Minnesota Power and Light**, and **General Public Utilities** between 1 July 1991 and 30 June 1994;

- up to 10 000 gigawatt hours of circulating power and energy in any consecutive 12-month period between 1 January 1996 and 31 December 2025 for simultaneous return to Canada;

- up to 112 megawatts of firm power and 1 320 gigawatt hours of firm energy to the **State of Vermont** between 1 July 1991 and 31 October 1992;

- up to 3 megawatts of firm power and associated energy to the **Power Authority of the State of New York** as a border accommodation between 1 July 1991 and 30 June 2021; and

- up to 100 kilowatts of firm power and associated energy as a border accommodation between 15 May 1991 and 14 May 2021.

The Board determined that the findings set out in its Reasons for Decision also applied to its environmental screening of the application. The Board found that any potential environmental effects and directly related social effects of the proposed exports would be mitigable to within prescribed standards with known technology.

Manitoba Hydro-Electric Board - Export of Electricity - EW-1-91

The Board is examining an application from **Manitoba Hydro** for three permits to export electricity to **Northern States Power Company** and **United Power Association in Minnesota**.

The Board requested interested parties to make their views known on the application before it determines whether to issue export permits or recommend to the Governor in Council that it designate **Manitoba Hydro's** application for licensing. Such a designation would necessitate a public hearing.

One permit is for the export of 200 megawatts of firm power and 883 gigawatt hours of firm energy per annum to **Northern States Power Company** during the summer seasons (1 May to 31 October) of 1997 to 2016.

The second permit is for the export of 400 megawatts of firm power and 1766 gigawatt hours of firm energy per annum to **Northern States Power** during the summer seasons of 1992 to 1994 and 150 megawatts of firm power and 663 gigawatt hours of energy per annum from 1995 through 2014.

The third permit is for the export of 150 megawatts of firm power and 663 gigawatts hours of firm energy per annum to **United Power Association** during the summer seasons of 1995 through 2014.

The exports would be made in accordance with the terms of seasonal diversity agreements providing for the return of electricity to **Manitoba Hydro** by the purchasers during the winter season. Those agreements also give **Manitoba Hydro** the right to purchase specific amounts of energy from its export customers when it faces "low water conditions" and requires such imports to meet its firm provincial demands and out-of-province firm commitments.

The Board is conducting an environmental screening of the proposed exports. In arriving at its decision, the Board will consider any information submitted by interested parties pertaining to the potential environmental impact of the proposed exports.

British Columbia Hydro and Power Authority and the British Columbia Power Exchange Corporation (POWEREX) - Export of Electricity - EW-2-91

The Board is examining by written submissions an application by **B.C. Hydro** and **POWEREX** for two six-year permits to export electricity to the western United States.

Interested parties have been requested to make their views on the application known before determining whether to issue export permits or recommend to the Governor in Council that it designate the application for licensing. Such a designation would necessitate a public hearing.

One permit is for the export of up to 2 300 megawatts of firm power and up to 6 000 gigawatt hours of firm energy in each year from 1 October 1991 to 30 September 1997.

A second permit is for the export of up to 20 000 gigawatt hours of interruptible energy less the amount exported, if any, under the firm electricity export permit from 1 October 1991 to 30 September 1997.

The Board has extended to 30 September 1992 the current export licences issued to **B.C. Hydro/POWEREX**. Any new export authorizations that the Board may issue in respect of this application will be effective from either 1 October 1992 or the date of issuance of such export authorizations.

The electricity would be exported to the **Bonneville Power Administration** and to other potential customers who are members of the **Western Systems Coordinating Council** and the **Northwest Power Pool**.

Pipeline Facilities

TransCanada PipeLines Limited - 1991/1992 Facilities and Associated Gas Export Licences - GH-5-89

In 1990 the Board held a public hearing to consider an application from **TransCanada** for approval to extend its pipeline system in the 1991/92 and then the 1992/93 contract years to serve expanding domestic and export markets. In its original application **TransCanada** proposed the construction of 1 592 km of pipeline, the installation of 21 new compressor units and two new compressor stations. With the exception of the one 4.5 km section of new pipeline at Iroquois, Ontario, all of the pipeline facilities applied for parallel **TransCanada's** existing system in Saskatchewan, Manitoba and Ontario. These facilities, which were finally estimated to cost $2.4 billion, will allow **TransCanada** to transport an additional 19.2 million cubic metres of gas per day by the fall of 1992, primarily to export points in eastern Canada.

In the same hearing the Board considered 15 gas export applications associated with the requested facilities. Applications by **Indeck Gas Supply Corporation** and **Rochester Gas & Electric Corporation** for orders requiring **TransCanada** to receive, transport and deliver the applicants' natural gas under Section 71 were heard and denied.

During the hearing the Board also considered a number of toll-related issues, including:

- the toll methodology to be applied to the capital and operating costs of the proposed facilities;
- the appropriate toll treatment of variances in construction costs; and
- the toll treatment of fixed costs associated with underutilized facilities.

These toll-related matters as well as the means by which economic feasibility of the proposed facilities could be determined were considered in a separate phase of the hearing held between 28 May and 26 September 1990.

On 6 November 1990 the Board issued its decision on toll methodology and economic feasibility. The Board was of the view that the rolled-in methodology continues to be appropriate and decided that all costs related to facilities approved in **TransCanada's** 1991 and 1992 expansion program would be rolled into its rate base for toll purposes.

The Board also decided to determine the economic feasibility of **TransCanada's** pipeline facilities proposed in the GH-5-89 proceeding by having regard to evidence on all relevant factors which impact on the likelihood of the facilities being used at a reasonable level over their economic life and of the demand charges being paid. Other proposed evaluative tests to determine economic feasibility were not retained by the Board.

As part of the GH-5-89 hearing on 15 and 18 October 1990, the Board considered **TransCanada's** application for early approval to construct 391.4 kilometres of

system-wide pipeline looping, the 4.5-kilometre Iroquois extension and relocation of two portable compressor units for a total cost of $546 million. **TransCanada** requested early approval of the partial facilities to allow for their construction during the 1991-92 winter to ensure a November 1992 in-service date for its most assured requirements. The Board approved the application and issued its decision on 13 November 1990.

In May of 1991, the Board approved all the remaining facilities proposed by **TransCanada**.

The Board also approved 15 gas export applications for a total of 45.2 billion cubic metres (1.6 trillion cubic feet) for various periods of time. (For more information on the gas export applications approved in GH-5-89 please refer to page 13 in the *Natural Gas Exports Section*)

The Board found that the proposed facilities would create only minimal environmental impacts of a local and temporary nature if the proposed environmental protection measures are implemented.

TransCanada PipeLines Limited - Gananoque Extension - GH-4-90

In the fall of 1990, in Kingston and Gananoque, Ontario, the Board conducted a review by way of a public hearing of a previous Board decision to deny **TransCanada** approval to construct a new pipeline known as the "Gananoque Extension" (GH-1-89).

The pipeline was to have extended 25.2 kilometres from **TransCanada's** mainline east of Kingston to a point on the international border near Wolfe Island on the St. Lawrence River. It would have transported natural gas to be exported by **Western Gas Marketing Limited**, as agent for **TransCanada**, to **Niagara Mohawk Power Corporation** in the State of New York, beginning 1 November 1991.

On 18 March 1991, the Board denied **TransCanada's** review application. In releasing its Reasons for Decision on 20 June the Board found that **TransCanada's** evidence in respect of several environmental and socio-economic matters was incomplete and therefore inconclusive. Furthermore, the Board was not convinced that in selecting its proposed route **TransCanada** had applied its route selection criteria in a sufficiently rigorous manner or that it had adequately assessed potential alternative routes.

Interprovincial Pipe Line Company, a division of Interhome Energy Inc. - Natural Gas Liquids Storage Facility - GHW-5-90/RH-3-90

By an application dated 30 April 1990, **Interprovincial** sought approval of a proposal to construct in 1991 a natural gas liquids storage facility adjacent to its

Edmonton terminal. **Interprovincial** also applied for approval of a toll methodology for the proposed facility. The facility would cost $18 million and include nine 350-metre sections of underground pipe-type storage vessels and related fill and pumpout lines and would allow shippers to accumulate natural gas liquids at the line rate and batch size needed for periodic injection into **Interprovincial's** pipeline system.

Prospective shippers who had entered into a facilities support agreement with **Interprovincial** also applied to the Board to ensure their access to the facilities.

The Board decided to consider matters relating to the construction and installation of the facilities by means of written submissions. An oral hearing was held from 12 to 17 November 1990 in Edmonton, Alberta to consider the need for the proposed facilities, the proposed toll design for these facilities and the shippers' applications with respect to access.

In February 1991, the Board approved the application and issued its Reasons for Decision in April 1991. The Board also determined that a stand-alone toll design will be applied to the facilities whereby all the costs will be borne by the specific users. In addition, the Board granted unapportioned access to the facilities for a group of nine prospective shippers who had asked **Interprovincial** to construct and operate the facilities.

The Board also conducted an environmental screening of the application.

Westcoast Energy Inc. - Adsett Pipeline Project - GH-6-90

The Board held a public hearing from 16 to 18 April in Fort Nelson, British Columbia to consider an application by **Westcoast** to construct the Adsett Pipeline.

In June the Board approved the application.

The proposal involved the construction of a 48-kilometre raw gas transmission pipeline from the Adsett gas field in northeastern British Columbia to **Westcoast's** Klua pipeline which extends to the Fort Nelson gas processing plant. The estimated cost of the facilities was $8.3 million.

Initially, the proposed pipeline will enable **Westcoast** to provide firm transmission services to two shippers.

The Board conducted an environmental screening of the application. On 11 April, the Board received a notice of motion from the **Prophet River Indian Band** requesting the Board to review and rescind its findings on the environmental screening document. The Board decided on 13 May that it did not have the authority under the *Environmental Assessment and Review Process Guidelines Order* to review the findings of the screening document and denied the application for review.

TransCanada PipeLines Limited - Blackhorse Extension - GH-1-91

In July the Board denied an application by **TransCanada** to build the Blackhorse Extension pipeline in southwestern Ontario.

TransCanada proposed to build 20.6 kilometres of pipeline and associated facilities for service beginning 1 November 1991. The pipeline was to extend from **TransCanada's** Niagara Line to a delivery point near Chippawa, Ontario and was estimated to cost $42.3 million. The extension would have interconnected with the proposed Empire State Pipeline, which is to serve central and western New York State.

In denying the application, the Board found that the markets proposed to be served by the extension could be served in a timely fashion by less expensive and environmentally superior means through the expansion of **TransCanada's** existing Niagara Line. The Board determined that the proposed facilities were not required.

The application was considered in a public hearing held between 22 April and 6 May 1991 in Niagara Falls and Ottawa.

The Board also conducted an environmental screening of the application by means of a written procedure separate from the hearing process.

TransCanada PipeLines Limited, ANR Pipeline Company, Rochester Gas & Electric Corporation and St. Clair Pipelines Limited - Review of Denial of TransCanada Blackhorse Extension

On 6 August **TransCanada, ANR, Rochester Gas & Electric** and **St. Clair Pipelines** filed an application for a review of the Board's decision denying the application by **TransCanada** to build the Blackhorse Extension.

On 9 August the Board decided that a recent decision by the **Federal Energy Regulatory Commission** in the United States constituted a changed circumstance which raised a doubt as to the correctness of the Board's decision and justified proceeding with the review. In its decision the **Federal Energy Regulatory Commission** approved construction of the Empire State Pipeline and denied competing applications.

Interested parties were invited to file with the Board by 30 August their comments on the merits of the review application. The applicants' reply comments were due on 16 September.

In light of the Canadian **Federal Court's** 18 October decision to quash the Board's 9 August decision to review (Refer to *Legal Actions* at page 62),

the Board decided on 12 November to seek comments from interested parties on whether a review should be held.

The Board will render its decision on whether to initiate a review in January 1992.

TransCanada PipeLines Limited - 1992/93 Facilities - GH-4-91

The Board held a hearing from 18 to 27 November in Calgary to consider an application by **TransCanada** to expand its natural gas pipeline system in western and central Canada in order to meet domestic and export requirements beginning 1 November 1992.

TransCanada's proposed expansion includes the construction of 278.2 kilometres of pipeline parallel to its existing pipeline in Saskatchewan, Manitoba and Ontario and the relocation of three portable compressor units.

The cost of the new facilities and the relocation is estimated at $360.4 million.

The expansion would enable **TransCanada** to provide 4.424 thousand cubic metres (156.2 thousand cubic feet) per day of new firm service from Empress, Alberta, 49 % of which is destined for domestic users in eastern Canada, and 51 % for customers in the United States.

The proposed expansion on the **TransCanada** system, together with an increase in the capacity of the **Union Gas Limited** pipeline, would also provide 1.062 thousand cubic metres (37.5 thousand cubic feet) per day of new firm service in southwestern Ontario from Sarnia to Niagara Falls, Ontario.

During the hearing, the Board also considered an application from **Northland Power** for an order directing **TransCanada** to receive, transport and deliver gas offered to **TransCanada** by **Northern Power** and to provide adequate and suitable facilities for that purpose.

The Board expects to issue its decision on the application in the Spring of 1992.

Alberta Natural Gas Company Ltd. - System Expansion - GHW-2-91

The Board is holding a hearing by means of written submissions on an application by **Alberta Natural Gas** to expand its pipeline system to transport additional volumes of natural gas to markets in the western United States, particularly to southern California.

The proposed expansion consists of additional and modified compression facilities on the company's three existing compressor stations in southern British Columbia, at an estimated cost of $81.8 million.

The expansion, coupled with pipeline looping proposed by **Foothills Pipe Lines (South B.C.) Ltd.**, would allow **Alberta Natural Gas** to transport an additional 26.4 million cubic metres (932 million cubic feet) of natural gas per day to the international boundary beginning 1 November 1993.

In the United States, the gas would be transported by proposed expansions of the pipeline systems of **Pacific Gas Transmission Company** and **Pacific Gas and Electric Company**.

At the end of the year the application was still under review.

Tolls and Tariffs

Westcoast Energy Inc. - 1991 Toll Application - RH-1-90

In January the Board issued its Reasons for Decision on an application from **Westcoast** for new tolls for the transportation of natural gas beginning 1 January 1991.

A public hearing had been held from 10 October to 6 November 1990 in Vancouver and in Ottawa.

The Board approved an increase in the company's rate of return on common equity from 13.25 to 13.75 %. **Westcoast** had requested a rate of 14.375 %. The Board also approved **Westcoast's** request that the common equity ratio remain at 35 %.

Trans Québec & Maritimes Pipeline Inc. - 1991/1992 Tolls - RH-2-90

In February the Board approved an application from **TQM** for new tolls to be charged effective 1 January 1991 and 1 January 1992.

A public hearing had been held in Ottawa from 10 to 13 December 1990, to consider the application. Matters other than rate of return were considered by written submission prior to the public hearing, with argument on all matters being heard at the hearing.

The Board approved a monthly toll of $6.2 million for 1991, a 7.2 % increase in the previous monthly toll of $5.776 million. The monthly toll for 1992 will be $6.4 million, a further 3.0 % increase.

The Board also decided that a rate of return on common equity of 13.75 % on a common equity ratio of 25 % is fair and reasonable for both 1991 and 1992. **TQM** had requested that its rate of return on equity be set at 14.5 %.

TransCanada PipeLines Limited - Gananoque Extension - RH-4-90

The Board held a hearing on 26 and 27 November 1990 in Ottawa to determine the appropriate toll methodology to be applied to the costs associated with **TransCanada's** proposal to construct the Gananoque Extension. (Refer to *Legal Actions* at page 66,)

Since the Board denied the application for the construction of the Gananoque Extension, the Board did not issue a decision on the subject.

TransCanada PipeLines Limited - Toll Application - RH-1-91

The Board issued its final toll order on 2 August, its decision on 4 October and its Reasons for Decision on 30 December 1991 on an application by **TransCanada** for new tolls effective 1 January 1991.

In its order of 2 August, the Board approved new tolls for the company effective 1 July 1991 for the transportation of natural gas to markets in Canada and the United States.

In its 4 October decision, the Board approved a revenue requirement for 1991 of $1.20 billion compared with **TransCanada's** forecast revenue requirement of $1.22 billion. For 1990, the Board had approved a revenue requirement of $934 million.

The Board also approved a rate of return on common equity of 13.5 %. **TransCanada** had requested 14.25 %. The rate previously in effect was 13.25 %.

With respect to the inclusion in its revenue requirement of costs related to **TransCanada's** move to Calgary, the Board decided to disallow approximately $3.6 million of the total amount as applied for and to approve **TransCanada's** recovery in its tolls of an amount of $43.7 million over a two-year period ending 31 December 1992.

The Board also made decisions on a number of other matters reviewed at the public hearings held between 14 May and 18 July in Calgary and Ottawa.

Interprovincial Pipe Line Inc. - 1992 Toll Application - RH-2-91

The Board commenced a public hearing on 2 December in Calgary to consider an application by **Interprovincial** to increase the tolls it may charge, beginning 1 January 1992, for transporting crude oil, natural gas liquids and petroleum products from Alberta to markets in Ontario and Québec.

Interprovincial is requesting an average increase of 12 % over the tolls currently in effect. The company is also requesting an 10.9 % increase in its net revenue requirement to $348 million, and an increase in its rate of return to 13.5 % from the currently authorized 13.25 %.

Interprovincial also applied for its deemed equity ratio to be raised to 42.5 % from the current level of 40 %.

Among the issues the Board will examine at the hearing is the treatment of costs and the toll design methodology for the Sarnia to Montreal portion of the pipeline, both in its current idled state and under a scenario where the pipeline would be reversed to allow east to west flow of crude oil.

On 28 November, Interprovincial applied for an average interim toll increase of 12 % over the tolls currently in effect. On 13 December, the Board approved average interim tolls higher by 9 % than the tolls currently in effect.

Other Activities

Natural Gas

The Board issued 107 short-term orders either for the export, the import or the transit movement of natural gas in 1991. The Board also issued 16 new licences and approved amendments to 14 existing licences during the year. (See *Appendix C4*)

During 1991 the Board monitored natural gas export transactions with regard to the terms of licence authorization as well as export movements under orders. It collected and published monthly data on export prices, sales, and associated transportation costs.

These monthly data were also used by a committee of officials of federal and producing-province governments to assess export prices against domestic prices.

Propane and Butanes

During 1991 the Board continued to monitor exports of propane and butanes. In this regard, the Board issued 50 orders for the export of propane and 42 orders for the export of butanes. As a condition of the orders, companies submit monthly data to the Board on the actual exports, including prices and volumes. In addition, companies provide information on their supply and the disposition of these products. The data are analyzed, and aggregated reports are provided to the industry and other interested parties.

Ethane

For purposes of export regulation, ethane is treated the same as natural gas. In 1991, there was one order issued to export ethane.

Oil

In 1991 the Board issued 122 orders for the export of crude oil and petroleum products. The Board receives monthly data from the industry on export volumes and prices for crude oil and petroleum products. The statistics are compiled and analyzed, and consolidated reports are issued to the industry and other interested parties on a monthly basis.

Electricity

During 1991, the Board continued its surveillance of exports to ensure compliance with the conditions contained in permits, licences and orders previously approved by the Board. The Board issued 17 export permits, but

revoked nine orders and three permits. The Board also amended the conditions of four licences, one order, three permits and one power line certificate.

As part of its monitoring function, the Board receives data on export volumes and revenues from each exporter and compiles these into a monthly report which is issued to exporting utilities, government departments and other interested parties. The monthly report also includes data on import volumes and costs.

Interprovincial Trade in Electricity

The Board has completed the first phase of its review, undertaken at the request of the Minister of Energy, Mines and Resources, to identify and examine the measures that could be developed to:

- enhance interprovincial trade in electricity;
- encourage greater co-operation between electric utilities; and
- enable buyers and sellers of electricity to have commercial access to available transmission capacity through intervening provinces for wheeling purposes. (Wheeling is the transmission of power belonging to one utility through the circuits of another utility for delivery to either a third party or back to the originating system.)

The Board's review is proceeding on two tracks: the first is concerned with interutility co-operation, the second with wheeling and transmission access. During the year the Board prepared several reports to promote a better understanding of the nature of the problems and the critical issues involved. These reports have been reviewed and commented upon by provincial governments and utilities. As part of the consultative process, the Board intends to solicit comments from interested parties on the results of its preliminary investigations.

Other Electrical Activities

During the year the Board continued to keep the Minister of Energy, Mines and Resources informed of the status of electricity exports. In both Canada and the United States, the Board also continued to consult with and contribute information to other government departments and industry groups which coordinate the operation of electric power utilities throughout North America.

The Board provided the Department of Energy, Mines and Resources with technical assistance on a reliability analysis of Manitoba Hydro's Nelson River high-voltage direct-current transmission system.

Pipeline Activities

The Board regulates a total of 53 natural gas, oil and products pipeline companies. The associated pipeline systems are shown in *Figure 1* and *Figure 2*.

All new pipeline facilities under the Board's jurisdiction must be authorized by the Board prior to construction and operation. The Board is responsible for monitoring their construction to ensure compliance with the Board's safety and environmental regulations and with the specific conditions of the approving order or certificate. In addition, the Board reviews construction and operating costs to ensure that toll payers receive cost-efficient service. Certificates are issued for new pipelines longer than 40 kilometres if they are approved by the Board following a public hearing, as required by the *National Energy Board Act*. All certificates and orders issued during 1991 approving new pipeline facilities are listed in *Appendices B (Oil) and C (Gas)*.

The *Onshore Pipeline Regulations* have been in effect since 1 September 1988. Proposed amendments to the regulations will be released to the industry for comments in 1992. The amendments will reflect the outcome of discussions between the Board and the Canadian Pipeline Industry Committee on the inquiry into a 1985 pipeline accident near Camrose, Alberta. In addition, the proposed amendments will include references to the new editions of the **Canadian Standards Association** pipeline standards, which have also been amended to incorporate certain recommendations from the Board-industry deliberations on the Camrose accident.

The Board continues to rely on the **CSA** standards to provide the technical requirements for the design, construction, and operation of oil and gas pipelines under its jurisdiction. Accordingly, the Board is committed to maintaining a strong participation in the standards development activities of the **CSA**.

Compliance Monitoring, Audits and Inspections

The Board continues to monitor compliance with the provisions of the *Onshore Pipeline Regulations* through construction inspections of new facilities, documentation audits, and safety audits of operating facilities. As part of the construction inspections and safety audits, the Board generally monitors compliance with the provisions of *Part II* of the *Canada Labour Code*.

Northern Pipeline Agency

In 1991 the **NPA** continued to rely on the Board for technical advice, to assist it in carrying out its responsibilities under the *Northern Pipeline Act*. This advice was provided in connection with the construction of two new compressor stations within Alberta on the eastern delivery leg of the pipeline system of **Foothills Pipe Lines Ltd.**, and in connection with the review of **Foothills'** proposal to expand the capacity of its western delivery leg by adding 78 kilometres of line pipe in southern British Columbia.

Figure 1

Oil and Oil Products Pipeline Companies Regulated by the National Energy Board

1. Aurora Pipe Line Company
2. Cochin Pipe Lines Ltd.
3. Dome Kerrobert Pipeline Ltd. and Pan Canadian Kerrobert Ltd.
4. Dome NGL Pipeline Ltd.
5. Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd.
6. Esso Resources Canada Limited
7. Husky Border Pipelines Ltd.
8. Interprovincial Pipe Line Inc.
9. Interprovincial Pipe Line (NW) Ltd.
10. Manito Pipelines Ltd.
11. Montreal Pipe Line Limited
12. Mont Resources Limited
13. Murphy Oil Company Ltd.
14. Northwest Transmission Company Limited
15. Petroleum Transmission Company
16. Pouce Coupé Pipe Line Ltd.
17. Shell Canada Products Limited
18. Sun Pipe Line Company
19. Trans Mountain Pipe Line Company Ltd.
20. Trans-Northern Pipelines Inc.
21. Wascana Pipe Line Ltd.
22. Westspur Pipe Line Company (1985) Inc.
23. Windsor Storage Facility Joint Venture
24. Yukon Pipelines Limited

Pipeline Incidents

The Board requires detailed reports of all incidents involving personal injury, fatality, pipeline malfunctions (such as leaks, breaks, fires or explosions) or any other events which result in a loss of service of a pipeline under its jurisdiction. Accident investigations or public inquiries are conducted to ascertain whether there was any contravention of Board regulations at the time of the accident, and whether the regulations should be amended in light of the accident. As well, these reports and inquiries are considered when reviewing pipeline safety, operational standards and regulatory requirements.

If a pipeline is damaged, the Board ensures that steps are taken to provide protection to the public and to property, to contain the spill of hydrocarbons, and to repair the damaged pipeline as soon as possible so that essential service may be restored. The Board continues its surveillance of the site to ensure the effectiveness of the company's environmental rehabilitation program.

During 1991 the Board carried out a number of field inspections of pipeline incident locations to monitor the implementation of company emergency, safety and environmental protection procedures.

Table 2 identifies the causes of pipeline incidents in the last five years.

In addition to the 49 incidents (which included one fatality) reported in *Table 2*, 341 relatively minor workplace injuries were reported in 1991. The Board is currently reviewing its reporting requirements to focus on more serious injuries. Currently, an injury that requires hospital treatment is considered reportable. In many locations, however, the closest medical facilities are hospitals at which even minor injuries are treated, thereby causing those minor injuries to be reported to the Board.

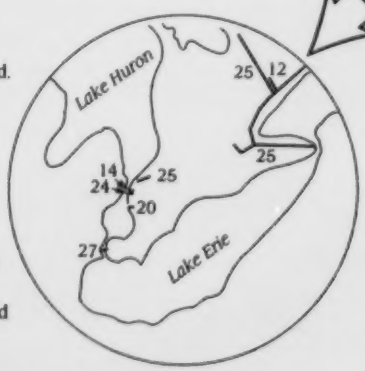
Table 2
Causes of Pipeline Accidents 1987 - 1991

	1987	1988	1989	1990	1991
Defective Welds	3	3	5	0	3
Material Failure	4	7	12	12	16
Third Party Damage	8	6	2	5	9
Corrosion	8	4	3	1	2
Other[a]	15	18	26	29	19
Total	38	38	48	47	49

[a] Includes workplace and construction accidents, operator errors, earth movements, and other causes.

Figure 2

Gas Pipeline Companies Regulated by the National Energy Board



1. Alberta Natural Gas Company Ltd
2. Amerada Hess Canada Ltd.
3. Amoco Canada Petroleum Company Ltd. (inactive)
4. Amoco Canada Resources Limited (inactive)
5. Bonanza Oil and Gas Ltd.
6. Bow Valley Industries Ltd.
7. B.P. Resources Canada Limited
8. Canadian Hunter Exploration Ltd.
9. Canadian-Montana Pipe Line Company
10. Centra Transmission Holdings Inc.
11. Champion Pipe Line Corporation Limited
12. Consumers' Gas (Canada) Limited
13. Foothills Pipe Lines Ltd.
14. Genesis Pipeline Canada Ltd.
15. Many Islands Pipe Lines (Canada) Limited
16. Mid-Continent Pipelines Limited
17. Minell Pipeline Ltd.
18. Murphy Oil Company Ltd.
19. Niagara Gas Transmission Limited
    (a) Ottawa River crossing
    (b) St. Lawrence River crossing
20. Novacorp International Pipelines Ltd. (certified)
21. Peace River Transmission Company Limited
22. Poco Petroleums Ltd.
23. SCL Quebec Pipeline Inc.
24. St. Clair Pipelines Ltd.
25. TransCanada PipeLines Limited
26. Trans Québec and Maritimes Pipeline Inc.
27. Union Gas Limited
28. Westcoast Energy Inc.
*29. Foothills Dempster Lateral (Corridor)
30. 167496 Canada Ltd.

* = *Proposed*

The *Canadian Transportation Accident and Safety Board Act* came into effect on 29 March 1990. This Act established a new Board with the mandate to conduct independent investigations and public inquires, if necessary, into any commodity pipeline incident within its legislative jurisdiction. The Transportation Safety Board of Canada takes precedence over the National Energy Board with respect to the investigation of causes of and factors contributing to incidents related to the operation of a pipeline.

The Transportation Safety Board of Canada and the National Energy Board are in the process of drafting a Memorandum of Understanding concerning their respective roles in future incident investigations.

Approvals and Construction

During 1991 the Board held public hearings on applications for new facilities from **TransCanada PipeLines Limited, Westcoast Energy Inc.** and **Interprovincial Pipe Line Company**. The details of these proceedings are reported under *Hearings, Inquiries and Reviews,* beginning on page 25.

During 1991 **TransCanada** constructed 799.8 kilometres of pipeline and added three new compressor units on its system.

Westcoast Energy Inc. constructed 77 kilometres of looping along its mainline (Fort Nelson and south Mainlines), and completed two new pipelines, the Klua pipeline (33.5 kilometres) and the Hossitl pipeline (45 kilometres). The Hossitl pipeline was authorized by the Board in late 1990. The McMahon Plant expansion, which also received Board approval in 1990, was completed in 1991. Originally part of the expansion project, the McMahon meter station will be resubmitted by **Westcoast** as a new application in early 1992. The Board also authorized the purchase by **Westcoast** of a portion of the **Petro-Canada Inc.** refining facility located adjacent to the McMahon Plant.

Interprovincial Pipe Line Company, a division of Interhome Energy Inc. received Board approval for terminalling and tankage facilities to be constructed at Hardisty, Alberta.

Over the course of the year the Board also issued 63 orders for the construction of new pipeline facilities totalling $381 million. Included in these projects were several new pipelines such as:

- **Amerada Hess Canada Ltd.'s** 25.5 kilometre gas pipeline from its Boundary Lake gas processing facilities in British Columbia to **NOVA's** Ole receipt point in Alberta;

- **Bow Valley Industries Ltd.'s** 5-kilometre gas pipeline near Medicine Hat, Alberta, to connect a gas well in Alberta to the **Bow Valley** gathering system in Saskatchewan;

- **Husky Border Pipeline Ltd.'s** four 10.5-kilometre oil pipelines, extending from **Husky Oil's** refinery and pipeline terminal in Lloydminster, Alberta, to the Bi-Provincial Upgrader storage tanks in Saskatchewan;

- **Canadian Hunter Exploration Ltd.'s** 3.7 kilometre gas pipeline crossing the British Columbia/Alberta border near Grande Prairie;

- **Murphy Oil Company Ltd.'s** 12-kilometre gas pipeline crossing the Alberta/Saskatchewan border some 60 kilometres north of Lloydminster; and

Approvals were also granted by the Board to permit corporate realignments, sales, purchases, deactivations and abandonments of pipeline facilities.

Financial Regulatory Matters

Background

Section 59 of the *National Energy Board Act* states that "the Board may make orders with respect to all matters relating to traffic, tolls or tariffs". The wide scope of this power is governed by the requirement that "all tolls shall be just and reasonable, and shall always, under substantially similar circumstances and conditions... be charged equally to all persons at the same rate". Fulfilling these responsibilities is the main objective of the financial regulation activities of the Board.

Of these activities, toll adjustment proceedings are the most time-consuming and visible to the public. Other financial regulation activities are aimed at ensuring that tolls remain just and reasonable. Hence, the Board monitors the financial performance of the companies under its jurisdiction and engages in periodic audits of their accounting books and records.

At present the Board regulates 53 pipeline companies, 30 of which are involved in the transportation of natural gas, and 23 in the transportation or storage of oil and petroleum products.

For regulatory purposes, pipelines are segregated into two groups - the ten gas and oil pipeline companies with extensive systems belong to Group 1, and those with less elaborate systems belong to Group 2. Under this grouping, which the Board introduced in 1985, the lesser degree of financial regulation to which the smaller pipelines are now subjected better reflects the relative size of their operations. While the Board may undertake on its own initiative a review of the tolls of any company under its jurisdiction, the tolls of the Group 2 companies are normally reviewed only on receipt of a complaint. Otherwise, the monitoring of the Group 2 companies consists primarily of a review of their annual financial statements.

The operations of the Group 1 companies are closely monitored by the Board. The companies are required to submit quarterly surveillance reports of their financial and operating performance, which are reviewed in detail, and their accounting books and records are audited on a periodic basis. Increases and decreases in the tolls of these pipelines must receive Board approval before they can be implemented and amendments to their tariffs are usually reviewed prior to their effective dates. Their applications for toll adjustment are frequently considered in oral public hearings, although written submissions are used when appropriate.

Within Group 1, however, the Board has reduced the degree of financial regulation of three Group 1 pipeline companies, namely **Alberta Natural Gas Company Ltd, Interprovincial Pipe Line (NW) Ltd.** and **Cochin Pipe Lines Ltd**. Now their tolls, tariffs, and amendments are mainly reviewed on a complaint basis.

Group 1 Toll Adjustments

During 1991 the Board held oral public hearings to consider new tolls and tariffs for **TransCanada PipeLines Limited** and **Interprovincial Pipe Line Inc.**. In addition, it issued Reasons for Decision for several proceedings that were started in 1990, including those related to **TransCanada, Interprovincial, Westcoast Energy Inc.**, and **Trans Québec & Maritimes Pipeline Inc.** The Board was also involved in the toll design aspects of two facilities applications from TransCanada. The details of these proceedings can be found reported under *Hearings, Inquiries and Reviews*, beginning on page 31.

The Board considered several applications and requests that did not require public hearings. The items described below are the main ones in that category for 1991.

On 3 August 1989 the Board directed **Alberta Natural Gas Company Ltd.** to review its gas transportation contracts with its shippers to eliminate certain shortcomings and to ensure the publishing of clear terms of access in a tariff. The Board approved a new tariff on 11 July 1991 after an extended period of review by the Board, the company and interested parties.

Based on its monitoring of the operations of **Alberta Natural Gas**, in December 1989, the Board directed the company to modify its calculation of its monthly cost of service for both tariff and billing purposes. In February 1990, the company applied for a review of the Board's decision, which the Board agreed to conduct, and on 5 July 1990 the Board decided to re-affirm its earlier directive. On the latter date, the Board also invited comments from the industry on a refinement to the method of calculating the company's cost of debt. Based on comments from interested parties and the company, on 1 March 1991 the Board decided to consider the entire debt component as long term and approved a cost rate of 11.5 % for the deemed debt amount.

On 16 September 1991 **Alberta Natural Gas** filed a revised cost of service to be effective 1 November 1991, which reflected an increase in rate of return on equity from 13.25 to 13.75 % and a decrease in depreciation. The Board approved the requested change in depreciation methodology effective 1 October 1991 and accepted the other changes in cost of service without commenting on them.

Foothills Pipe Lines Limited filed an application in January 1991 for a decrease in its interruptible tolls for the transportation of natural gas in Saskatchewan (Zone 9) for the period of 1 April 1991 to 31 March 1992. On 28 March 1991 the Board approved new tolls for Tier 1 and Tier 2 services which, on average, are 5.6 % lower than those previously in effect.

Trans-Northern Pipelines Inc. filed an application in February 1991 to increase its tolls for the transportation of refined petroleum products. The Board made the company's existing tolls interim effective 1 April 1991, and released its decision on the application on 1 October 1991. The Board approved a toll

increase of 12.2 %. It also approved a temporary toll surcharge for the remainder of 1991 to allow the company to recover the shortfall resulting from the lower tolls that were charged during the interim period.

On 30 April 1991 **Unocal Canada Limited** applied to the Board for a decrease in the toll surcharge applicable to the Hossitl raw gas transmission facilities of **Westcoast Energy Inc.** located in northeastern British Columbia. In accordance with the approved policy governing its calculation, the surcharge was set based, among other things, on limitations to the availability of capacity to process the gas to be transmitted through the new facilities. However, as **Unocal** argued in its request, the limitations were removed when substantial processing capacity became available after **B.C. Gas Inc.**, a major customer of **Westcoast**, decided not to convert all of its sales contracts to service contracts. On 31 October 1991 the Board found that this availability of capacity rendered invalid the original calculation of the surcharge and decided to grant **Unocal's** request for a downward adjustment. The Board's decision on the final level of the surcharge was issued early in 1992.

Pacific Northern Gas Ltd., a sales customer of **Westcoast**, applied to the Board on 8 July 1991 for priority to access service capacity on **Westcoast's** system effective 1 November 1991 to allow the company to maintain its level of contracting with **Westcoast** in converting from a sales to a service customer. The Board approved the application on 19 September 1991.

On 8 August 1991, **Westcoast** applied to the Board for permission to delay implementing a system of daily billing by which customers would be billed each month for the actual volumes of interruptible gas taken each day in the two residue gas transmission zones of its system (Zones 3 and 4). The Board expected that daily billing would be in place by the start of 1992 to replace the current billing system where customers are paying interruptible tolls only when they exceed their full entitlement for the month under their firm service agreements. After having considered comments from interested parties and **Westcoast**, the Board agreed to the deferral on 20 December 1991; however, it required **Westcoast** to carry out a study to determine whether the current billing system is being abused and to explain why daily billing should not be implemented by the start of 1993.

On 7 November 1991 the Board approved revisions to the tariff of **Westcoast** to allow the company to eliminate the transportation storage service to the underground storage reservoir of **Unocal** located in the transmission zone north of compressor station No. 2 (Zone 3). The Board also approved amendments to the general terms and conditions applicable to Zone 3 that ensured that the shippers who continued to use **Unocal's** storage reservoir enjoyed the same operating flexibility that they had under the storage service.

Centra Transmission Holdings Ltd. (formerly **ICG Transmission Holdings Ltd.**), a Group 2 company, filed a new tariff for a toll increase effective 15 February 1991. In its filing, the company explained that the increase is due to a $1.2 million increase in cost of service occasioned by the expansion of its

system during 1990 to serve a new cogeneration plant located at Fort Frances in the Lake of the Woods region of northern Ontario. On 29 April 1991, the **Corporation of the Town of Fort Frances** filed a complaint with the Board in which it asked that the toll increase be suspended. The Board decided to consider the request and, on 1 August 1991, made **Centra's** tolls interim pending a Board review of the matter. On 16 December 1991 **Centra** requested a revision to its interim tolls, which the Board approved on 30 December 1991. Final submissions from interested parties on the complaint were filed with the Board in early 1992.

Toll Adjustment Procedures

On 29 January 1990, the Board initiated a review of the toll adjustment procedures for **Interprovincial Pipe Line Company, Trans Mountain Pipe Line Company Ltd.** and **Trans-Northern Pipelines Inc.** as set out in Orders TO-4-85, TO-5-85 and TO-6-85, respectively. These procedures, which are almost identical for all three companies, were established to allow expedited toll adjustments without oral hearing. The Board questioned the continued appropriateness of the procedures when it became aware that they posed several difficulties, not only for the Board, but also for the pipeline companies involved and interested parties. On 14 February 1991, the Board issued its decision on this matter. Among other things, the Board ruled on various deadlines associated with the different types of applications, on filing requirements prior to and during the review, as well as on matters related to process.

Task Forces

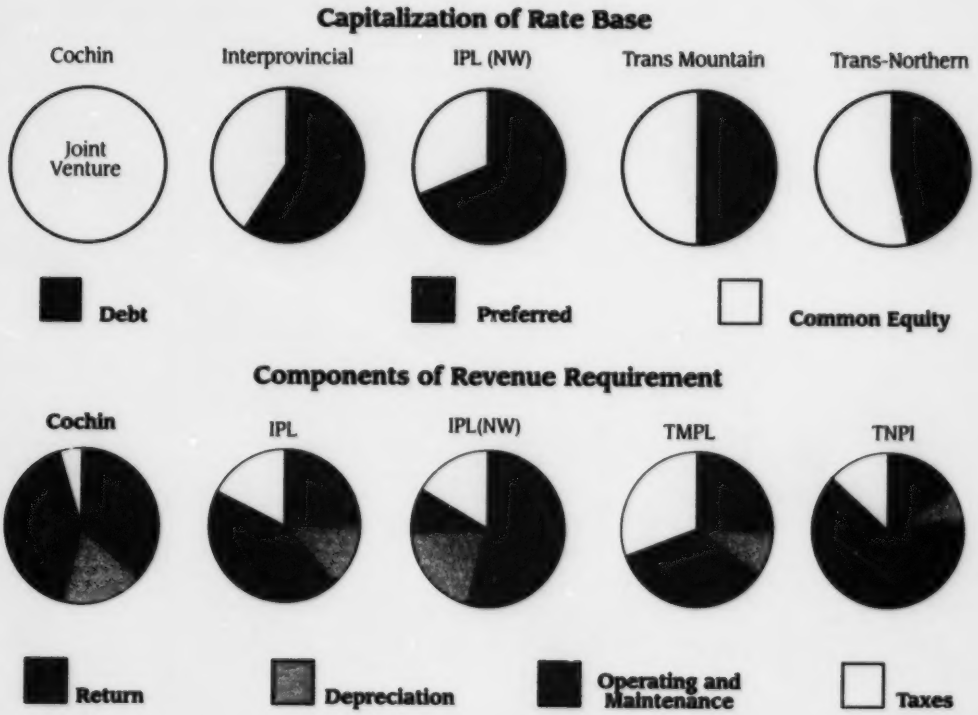
In recent years a number of Group 1 pipeline companies have established joint industry task forces on toll, tariffs and operating matters. These task forces provide a forum for parties to not only exchange information, but also discuss and possibly resolve issues before applications are filed with the Board. Recent experience showed that task forces have been successful in both resolving certain issues and in reducing the number of matters requiring Board resolution. Currently, three pipeline companies have set up task forces - **Westcoast Energy Inc., TransCanada PipeLines Limited** and, more recently, **Trans Mountain Pipe Line Company Ltd.**.

During 1991 **Westcoast** continued to rely on its Task Force on Tolls and Tariffs before involving the Board in significant matters affecting its regulation. **TransCanada** submitted Task Force Reports as part of its applications for new tolls for 1991 and 1992. The resolutions contained in the report filed in the 1991 proceeding contributed to a shorter hearing. **Trans Mountain** also included a summary of the outcome of its negotiation process as part of its application for new tolls for 1992. The summary afforded all intervenors the opportunity to present their comments on the negotiated issues.

Financial Information

The 1991 financial information for the Group 1 companies may be found in the *Financial Regulation Appendices E1* and *E2*. These tables are the source for the information on rate base and revenue requirements illustrated in *Figure 3* and *Figure 4* for the oil and gas pipelines respectively. *Figure 5* provides a comparison of the rates of return on common equity approved by the Board with the actual rates earned for each of the companies.

Figure 3
Group 1 Oil Pipelines
Rate Base and Revenue Requirement



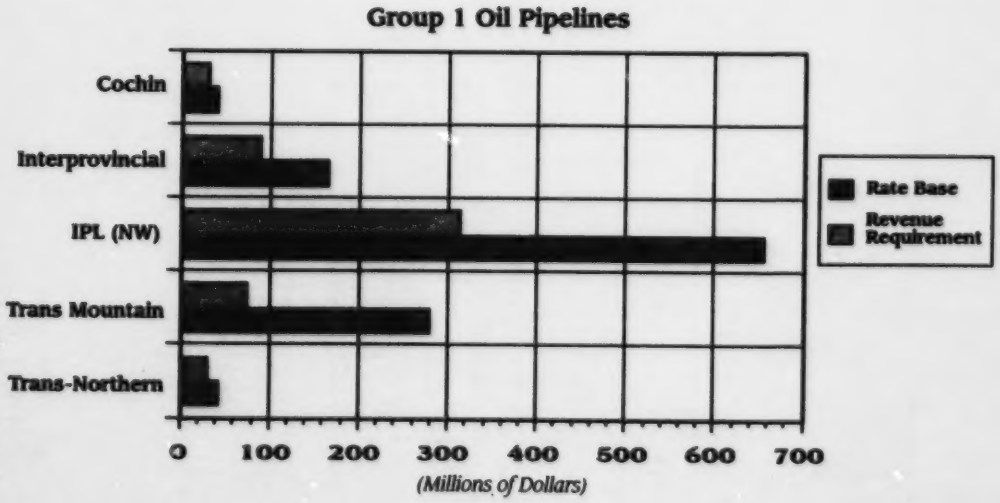


Figure 4
Group 1 Gas Pipelines
Rate Base and Revenue Requirements

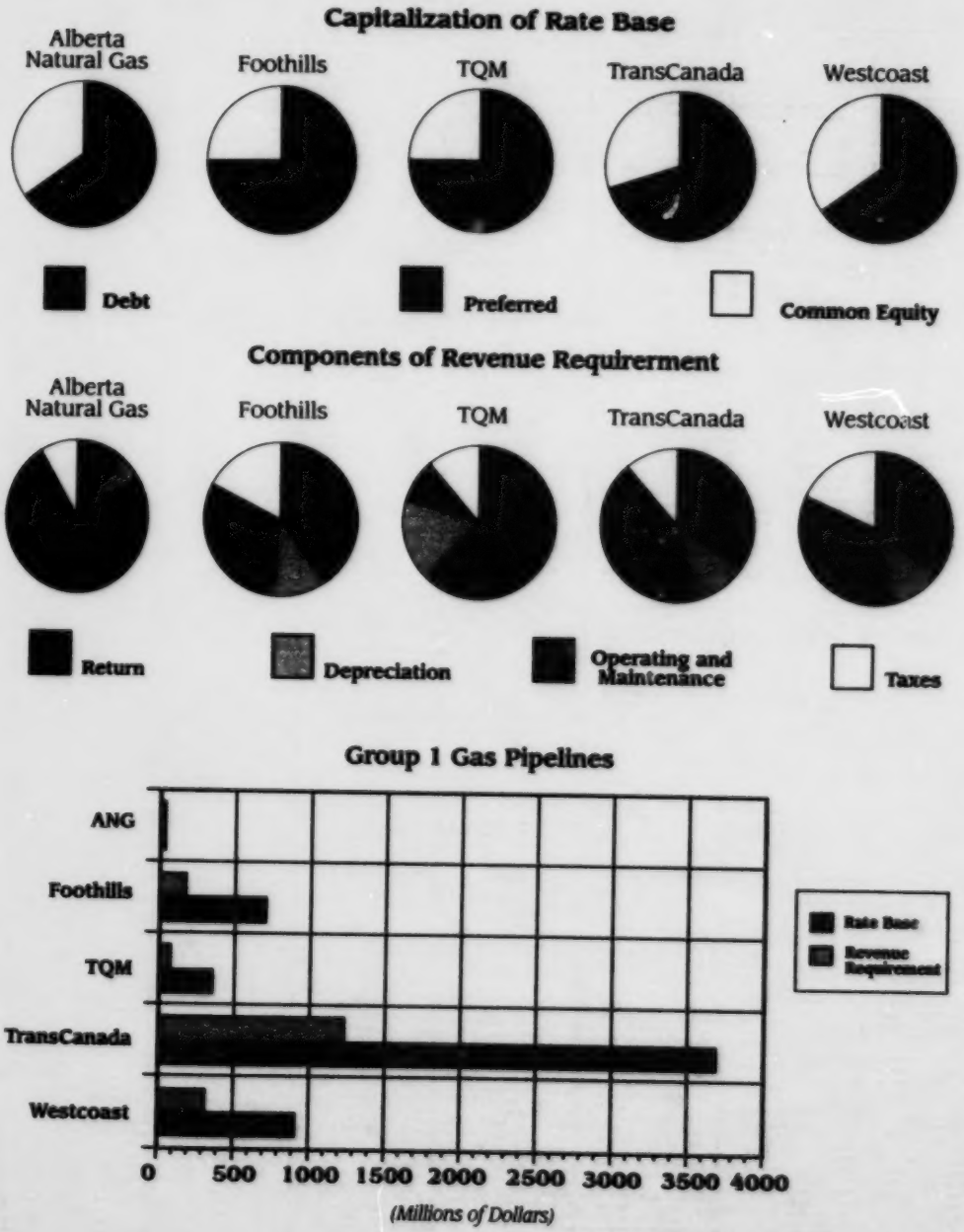
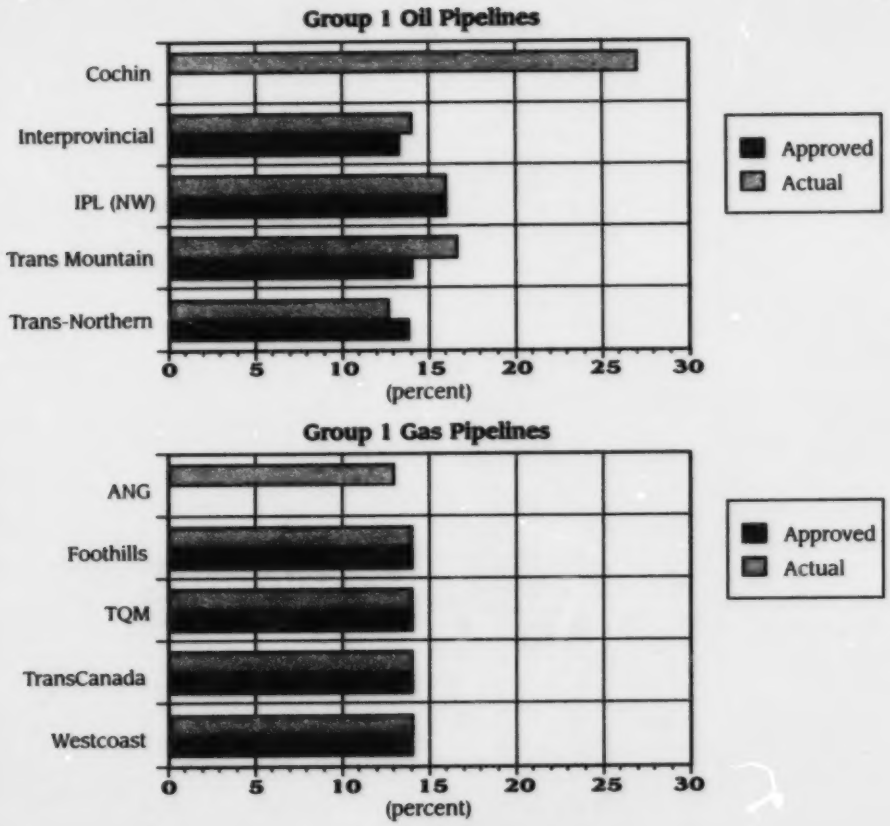


Figure 5
Group 1 Companies
Rate of Return on Common Equity



1991	Common Equity	
OIL PIPELINES	**Ratio**	**% Return**
Cochin	N/A	26.99
Interprovincial	41	14.03
IPL (NW)	31	16.00
Trans Mountain	50	16.60
Trans-Northern	54	12.60
GAS PIPELINES		
Alberta Natural Gas	35	13.38
Foothills	25	14.25
TQM	25	14.44
TransCanada	30	13.61
Westcoast	35	13.65

Reference: Financial Regulation Appendices

Environmental Matters

Since its creation in 1973, the Environment Branch (now the Environment Directorate) of the Board has, as part of the Board's responsibilities under the *National Energy Board Act*, paid specific attention to those environmental issues associated with applications for certificates and orders to construct and operate international and interprovincial pipelines, and international power lines. In making its decisions on those applications, the Board takes into consideration environmental concerns related to such matters as air, land, and water pollution; disturbance of renewable and non-renewable resources; the integrity of natural habitats; the disruption of land and resource use; and the protection of landowner rights.

Companies preparing an application to the Board are encouraged to anticipate and discuss with all levels of government, public interest groups, and affected landowners, the environmental issues and concerns that the proposed project could create. Such early planning with respect to environmental matters produces a more complete application addressing the appropriate alternatives and taking into account the public's concerns.

The environmental assessment submitted by the applicant is an important first step in the Board's review process. The report describes in detail the proposed pipeline or power line corridor in its existing state, the anticipated impact of the project on that corridor, any public concerns associated with the project, and the procedures to be implemented by the company to mitigate any impacts. In addition, the Board ensures that, where negative effects on the environment cannot be avoided, companies implement the proper mitigative measures during construction and during the rehabilitation of the affected area. Where potential impacts on the environment are identified, the Board requires the development of an environmental issues list which is used as a method of tracking the status of issues during the construction and operation of a project. The issues list complements the environmental assessment process and provides a focus for environmental protection activity during all phases of a project.

To ensure the highest level of environmental protection, the Board welcomes interventions at hearings from local environmental and public interest groups, as well as concerned individuals. To encourage public participation, the Board often convenes its hearings in the area where construction impacts would occur.

The Board conducts inspections during pipeline and power line construction as part of its environmental protection program to ensure compliance with the companies' environmental protection procedures and the Board's requirements. Companies constructing energy transmission facilities also must submit post-construction monitoring reports which document the restoration of the right-of-way following construction and which update the environmental issues list.

Furthermore, the Board ensures that pipelines are operated and maintained in an environmentally acceptable manner. The Board's activities include periodic inspections to monitor the condition of rights-of-way and inspections of pipeline

incident sites to ensure that environmental protection, restoration and maintenance measures are fully implemented. The Board conducts periodic inspections of pipeline pump and compressor stations, including noise surveys and inspections of hazardous material storage facilities. In addition, the Board monitors the operation of three gas plants operated by **Westcoast Energy Inc.,** with particular emphasis on the monitoring of sulphur emissions and liquid effluents from waste-water retention ponds.

In 1991 the Board carried out periodic environmental inspections of several pipeline construction projects, including **TransCanada PipeLines Limited's** looping project through a portion of the Great Sand Hills of Saskatchewan. That work was of special public interest because of a land-use moratorium imposed in July of 1990 by the **Government of Saskatchewan's Department of Environment and Public Safety** on the sensitive core area of the Great Sand Hills. In complying with Board regulations **TransCanada** will submit environmental monitoring reports in December of 1991 and 1992. Where necessary, additional remedial action will be taken to repair any damaged sites in the Great Sand Hills.

In addition to carrying out periodic environmental inspections of construction activities in 1991, Board inspectors also monitored the rights-of-way of projects completed in 1988, 1989 and 1990. They included **TransCanada's** 1988 and 1989 looping programs in the Niagara region, its 1989 looping program in northwestern Ontario and **Westcoast's** Umbach Line and North Jedney Extension in northeastern British Columbia. The restoration of the rights-of-way inspected in 1991 continues satisfactorily with few environmental impacts resulting from the construction projects. The Board will continue to monitor those rights-of-way to ensure that they are fully restored.

In 1991, the Board continued its procedure of conducting periodic inspection of operational pipeline systems to ensure that right-of-way maintenance was occurring. Due to the relocation of the Board's operations to Calgary, Alberta, the Board concentrated its early 1991 inspection efforts on pipeline systems in eastern Canada. The **Trans-Northern** system in southern Ontario, the Montreal Pipeline system south of Montreal, Québec, and all the pipeline crossings of the St. Clair River in the Sarnia, Ontario area were inspected. It was observed that all those rights-of-way were being maintained in an acceptable manner.

Presently, 11 companies under the Board's jurisdiction have operating equipment which contain polychlorinated biphenyls (PCBs) or have PCB-contaminated materials in storage. The Board requires companies to provide updated inventories of PCBs still in service or in storage, and conducts inspections where appropriate. As well, the Board monitors PCBs in storage and in-service at facilities under its jurisdiction. The four inspections conducted in 1991 found that all sites were in compliance with the federal *Interim Order Respecting the Storage of Wastes Containing Chlorobiphenyls*.

The Board also responded to several landowner complaints concerning impacts caused by the construction and operation of pipeline facilities.

Recent Environmental Activities

The last three years have seen an increase in public awareness and a number of developments in government policy regarding environmental matters. In response to these developments, several new environmental initiatives have been undertaken by the Board.

During 1991, in response to an earlier letter of guidance from the Board, companies applying for certificates or orders implemented programs to notify the public early of proposed energy projects. Public input was then incorporated into applications submitted to the Board.

Recognizing the close and important relationship between energy and the environment, the Environment Branch provided advice on environmental matters, which was incorporated into the Board's report on *Canadian Energy Supply and Demand*. The advice related specifically to emissions of certain gases associated with the production and consumption of fossil fuels.

Under the *Environmental Assessment and Review Process Guidelines Order ("EARP Guidelines Order")*, the Board conducted environmental screenings of applications for exports with the aim of determining the significance of any environmental issues which might be associated with the proposed exports.

During 1991 the Board screened a total of 18 applications for gas and oil exports through its public hearing process: of these 17 were dealt with through written submissions.

To avoid any undue regulatory burden on applicants, especially for those projects where the environmental effects would be insignificant, an 'exclusion list' was developed in cooperation with the **Federal Environmental Assessment Review Office**. The list identifies the types of proposals that would not normally be expected to produce any adverse environmental effects and, as a result, would be automatically excluded from further examination under the *EARP Guidelines Order*.

During 1991 the Board monitored the progress of *Bill C-13*, the Canadian Environmental Assessment Act, and assessed the potential impact of the passage of that Act on the Board's environmental assessment and hearing processes.

The Board also studied the rulings of the **Supreme Court** and **Courts of Appeal** relating to environmental assessment proceedings, in order to determine how those rulings will impact upon the Board's environmental jurisdiction.

In October 1990, **Hydro-Québec**, the **Grand Council of the Crees (of Québec)** / the **Cree Regional Authority** and **le Procureur général du Québec** appealed a Board decision relating to the issuance of licences to **Hydro-Québec** for the export of electricity. **Hydro-Québec** and **le Procureur**

général du Québec appealed, among other things, the Board's decision to make the licences issued subject to the condition that these shall remain valid to the extent that any production facility required by **Hydro-Québec** to supply the authorized exports, for which construction had not been authorized at the time of completion of the hearing, will have been subjected, prior to its construction, to the appropriate environmental assessment and review procedures as well as to the applicable environmental standards and guidelines in accordance with federal government laws and regulations.

On 9 July 1991 the **Federal Court of Appeal** rendered its judgement. In its decision, the **Court** considered the sections of the *National Energy Board Act* relevant to the issuance of electricity export licences. Based upon its construction of those sections, the **Court** found that the Board's jurisdiction did not extend to **Hydro-Québec's** upstream production facilities and that the Board could not therefore impose licence conditions in respect of those facilities. The **Court** struck down the impugned conditions, but ruled that the licences remained valid. In light of this decision and other recent court decisions, the Board continues to assess its environmental; responsibilities under its own *Act* and under the *EARP Guidelines Order*.

Detailed Routing - Pipelines and Power Lines

Persons whose lands may be affected by the route of a pipeline or power line approved by the Board can present their views to the Board at a local public hearing. Their evidence is considered in the determination of the final detailed route of the line.

In the case of power lines, detailed routing matters are normally dealt with under provincial laws unless an applicant elects to have federal laws apply.

Socio-Economic Impact

Whenever a matter coming before the Board raises significant socio-economic issues, the Board:

- takes into account local and regional socio-economic issues in determining whether the public interest would be served in granting an approval; and

- within the scope of its jurisdiction, ensures that project applicants take all reasonable steps to minimize and/or mitigate project-induced negative impacts while at the same time enhancing positive impacts.

The Board expects project proponents to provide local and regional parties with an early opportunity to express their views on project impacts, and to take these views into account in the project design phase. Project proponents are required to identify possible adverse as well as positive impacts related to the project, and

to propose an action plan to deal effectively with the impacts. Monitoring of the success or failure of action plans is an integral part of the process, and is intended to produce remedial follow-up. Where impacts are likely to be significant, the Board would set terms and conditions as part of its approval, and would follow-up in order to ensure compliance.

Third-Party Crossing Matters

The *National Energy Board Pipeline Crossing Regulations, Part I* and *Part II* (the *"Pipeline Crossing Regulations"*), establish requirements for third-party excavation and construction activities affecting pipelines. During the three years that the regulations have been in effect the Board did not have to issue any third-party crossing approvals.

The Board continued to monitor compliance with the regulations, encourage safe construction and excavation practices near pipelines, and promote public awareness of the pipeline crossing regulations through:

- 78 detailed investigations of third-party violations reported by the pipeline companies;
- 16 random field inspections of construction and excavation activities affecting pipelines;
- audits of the crossing records of ten pipeline companies and reviews of their public awareness programs for third-party damage prevention; and
- presentations and meetings with utilities, excavators and various agencies across the country.

In March 1991, the Board revised its guide entitled *Excavation and Construction Near Pipelines* to include the amendments to section 112 of the Act concerning excavation using mechanical equipment and explosives within 30 metres of a pipeline, and the operation of a vehicle or mobile equipment across a pipeline. The guide contains a brief explanation of these additional responsibilities.

The guide was originally prepared in June 1990 to assist those involved in third-party activities that may affect Board-regulated pipelines. It includes the *Pipeline Crossing Regulations*, maps showing the general location of Board-regulated pipelines, and contact lists for Board and pipeline company staff. Approximately 2 500 English and 900 French copies of the revised guide have been distributed to pipeline companies, contractors, utility owners, technicians, consultants and other interested third parties.

Advisory Functions

Study on the Future Use of the Sarnia-Montreal Pipeline

The Board conducted a study, at the request of the **Minister of Energy, Mines and Resources**, on the future use of the Sarnia-Montreal pipeline. The pipeline, which is part of the **Interprovincial Pipe Line Company** system, transports crude oil from western Canada to refineries in Montreal.

In a letter to the Board, the **Minister** stated that a diminishing supply of light western crude oil, more economic foreign crude supply opportunities for Montreal refiners and long transit times to move oil from Sarnia to Montreal have all contributed to the uncertainty about the use of the pipeline.

As a result, the **Minister** asked the Board to advise him on the "prospects for and implications of closure of the pipeline and the options available to industry and/or government for maintaining the line in an operating mode with west-east or east-west flow".

The Board's report, dated April 1991, was made public by the **Minister** on 25 July 1991.

The main conclusions of the Board's report were the following:

- Canadian crudes are now regarded by Montreal refiners as being generally uncompetitive with overseas crude, primarily as a result of long delivery times and high inventory costs; and

- There are no immediate security of supply reasons requiring government intervention to keep the crude oil pipeline operating between Sarnia and Montreal. There are sound reasons for governments not to intervene as producers determine the most economic means to dispose of domestic crude oil supply and as refiners provide for longer term access to crude oil for their refineries.

Energy Studies

Canadian Energy Supply and Demand

The Board released its update of energy projections in the June 1991 report entitled *Canadian Energy Supply and Demand, 1990 - 2010*. The report is one component of the ongoing advisory and monitoring functions for which the Board is responsible under the *National Energy Board Act*.

The projections were prepared by the Board after extensive informal consultations with governments, industry and other interested parties in Canada and the United States. A novel feature of the report was the first time inclusion of estimates of emissions of gases from the production and use of energy, including those gases linked to the greenhouse effect, acid rain and low-level ozone.

Other Energy Studies

In the latter part of 1991 the Board initiated two studies for release in 1992:

- the *Natural Gas Market Assessment* will focus on trends in the long-term contracting of Canadian gas for domestic and export markets. It is a main component of the Board's monitoring of gas markets under the Market-Based Procedure employed by the Board in considering export applications; and

- the *Export Impact Assessment* will address the impact on domestic energy and natural gas markets of additional gas exports over the next 20 years. This results of this study will help guide the Board when it considers specific export applications under the Market-Based Procedure.

Legislation and Regulations

The following section outlines changes that were made during 1991 to the *National Energy Board Act*, regulations, and rules under which the Board operates. The Board's quarterly Regulatory Agenda provides additional detail on these matters.

National Energy Board Act

Bill C2 (National Energy Board Act [Measure To Amend]) was given Royal Assent on 21 June 1991. The purpose of *Bill C2* is to give effect to the government's decision to relocate the Board from Ottawa to Calgary, Alberta.

Onshore Pipeline Regulations

The *Onshore Pipeline Regulations* specify, among other things, the requirements for the protection of property, the environment, and the safety of the public and workers during the construction, operation and abandonment of an onshore pipeline.

During 1992, the Board intends to issue proposed amendments for public review and comment. Those amendments reflect the outcome of Board-industry deliberations principally regarding the operation and maintenance of onshore pipelines. They also include improvements based on the Board's experience since the publication of the *Onshore Pipeline Regulations* in 1988.

Offshore Pipeline Regulations

Draft *Offshore Pipeline Regulations*, based on the standards of the **Canadian Standards Association**, have been developed in close cooperation with industry. The regulations are being prepared in anticipation of the development of offshore production and will address the safety and environmental protection requirements for the construction, operation and abandonment of offshore pipelines.

On 20 April 1991, the draft *Offshore Pipeline Regulations* were prepublished in *Part I* of the *Canada Gazette*. The prepublication allowed 30 days to interested parties to provide their comments on the proposal.

Following the consideration of the comments received, the regulations will be forwarded to the Minister of Energy, Mines and Resources with a request for promulgation and publication in *Part II* of the *Canada Gazette*.

Gas Plant Regulations

The Board is drafting Gas Plant Regulations to provide for the safe design, construction and operation of gas plants under its jurisdiction. These regulations will be incorporated into the *Onshore Pipeline Regulations*. The Board expects to issue these regulations for comments in 1992.

International Power Line Crossing Regulations

During 1988, on the advice of the **Department of Justice**, the Board divided its proposed International Power Line Crossing Regulations into two sets of regulations, as follows:

- *International Power Line Crossing, Construction and Abandonment Regulations*
  These regulations deal with crossings by international power lines as well as each company's responsibilities to maintain crossing records, abandon crossings, and report incidents.

- *International Power Line Crossing Regulations*
  These regulations deal with crossings of international power lines and set out the terms and conditions under which leave of the Board to cross such power lines need not be obtained.

The draft regulations are being examined by the Department of Justice.

Export and Import Reporting Regulations

These proposed regulations, under subsection 129(1) of the *Act*, would require persons exporting oil, natural gas, or electricity, or importing natural gas under a licence or order, to provide certain information to the Board. The information is similar to that currently required by the *Part VI Regulations*. However, on the suggestion of the Standing Joint Committee on Regulatory Scrutiny, the Board decided to remove reporting requirements from those regulations and to make new regulations. The regulations will require Governor in Council approval before taking effect.

National Energy Board Part VI Regulations

During 1991, the Board continued its review of the *National Energy Board Part VI Regulations* (the *Part VI Regulations*) to reflect changes in export regulation and changes suggested by the standing Joint Committee on Regulatory Scrutiny, including the removal of those provisions respecting export and import reporting requirements now included in the proposed *Export and Import Reporting Regulations*. The amendments will require Governor in Council approval before taking effect.

National Energy Board Rules of Practice and Procedure

The Board issued a revised draft of the *National Energy Board Rules of Practice and Procedure* on 7 May 1987 and directed all parties to use them as of that date. During 1991, the Board continued its ongoing review of these rules with the intent of further improving on the ways in which they work in practice.

The revised draft will require further examination by the Department of Justice and publication in the *Canada Gazette* before it is made final.

Legal Actions

Altamont Gas Transmission Company and National Energy Board, Northern Pipeline Agency, Foothills Pipe Lines (Yukon) Ltd., and others

In 1978 the Canadian Parliament enacted the *Northern Pipeline Act* which granted certificates of public convenience and necessity to subsidiaries of **Foothills Pipelines (Yukon) Ltd.** for the construction of the Canadian portion of the **Alaska Highway Gas Pipeline**. It was contemplated that the certificates would be used to construct the Canadian portion of a pipeline to transport Alaskan gas across Canada to the lower 48 United States. However, the certificates were subject to conditions. Condition 12 prohibited construction of the Canadian portion of the **AHGP** prior to financing for the whole of that portion of the pipeline being obtained.

Condition 12 was amended in 1980 to permit **Foothills** to prebuild certain sections of the **AHGP** in southern Canada, which were to be built to facilitate the export of surplus Canadian gas pending completion of the remainder of the **AHGP**. The amended Condition 12 provided that construction of the "prebuild" sections could proceed upon proof that financing for the prebuild sections had been obtained and that financing for the remainder of the pipeline could be obtained. After satisfying this financing condition, **Foothills** constructed certain portions of the prebuild sections.

On 31 May 1990, **Foothills** applied to the **Northern Pipeline Agency** to construct a segment of the **AHGP** in south-eastern British Columbia, which **Foothills** characterized as a further extension of the prebuild. **Altamont Gas Transmission Company** at that time was intending to apply to the Board to construct a competing pipeline. By a letter addressed jointly to the Board and the **NPA, Altamont** objected to the manner in which **Foothills** was pursuing its application. **Altamont** argued that the *Northern Pipeline Act* contemplated the construction of a pipeline from Alaska, across Canada to the U.S. and that the certificates issued pursuant to that Act were not intended to be used in the manner proposed by **Foothills**.

Following submissions by various parties, the **NPA** ruled that **Foothills'** application was properly before it, but that before proceeding with the project, **Foothills** would have to satisfy Condition 12. In its decision of 14 February 1991, the Board concurred with the **NPA**.

On 28 February 1991, **Foothills** applied to the Board and the **NPA** for an amendment to Condition 12, which would allow **Foothills** to construct the applied-for project without first obtaining financing for the entire Canadian portion of the **AHGP**. After considering the views of interested parties, the

Board granted **Foothills'** application and recommended to the Governor-in-Council that Condition 12 be amended accordingly.

On 20 June 1991 **Altamont** filed an application in the Federal Court Trial Division pursuant to s. 18 of the *Federal Court Act* seeking an order of the Court:

- quashing the 14 February 1991 decisions of the Board and the Designated Officer under the *Northern Pipeline Act* to the extent that the decisions determined that Addendum 4 to the System Design Report filed by **Foothills** with the **NPA** on 31 May 1990 was properly before the **NPA** under the *Northern Pipeline Act*;

- quashing the 27 May 1991 decision of the Board amending Condition 12 of *Schedule III* to the *Northern Pipeline Act*; and

- prohibiting or enjoining the Board, the Minister responsible for the **NPA**, the Designated Officer under the *Northern Pipeline Act*, et. al., from carrying out any duty or responsibility under or flowing from the *Northern Pipeline Act* in respect of a purported expansion by **Foothills** of the "pipeline" as defined in that Act and from making any finding or otherwise taking any action pursuant to the Board decision dated 27 May 1991 amending Condition 12.

Altamont argued that the certificates issued to **Foothills** under the *Northern Pipeline Act* were never intended to be used in the manner proposed by **Foothills,** and that the proposed pipeline expansion should properly be the subject of an application to the Board for a new certificate under the *National Energy Board Act*. The Federal Court set down **Altamont's** motion to be heard on 22 January 1992. However, in December 1991, **Altamont** withdrew its motion.

CNG Transmission Corporation - Blackhorse Extension

On 4 July 1991, the Board issued its decision (with reasons to follow) denying the application by **TransCanada PipeLines Limited** to construct the Blackhorse Extension.

The Blackhorse Extension was a proposal by **TransCanada** to construct 20.6 kilometres of pipeline and associated facilities for service beginning 1 November 1991. The pipeline was to extend from **TransCanada's** Niagara Line to a delivery point near Chippawa, Ontario and was estimated to cost $42.3 million. The extension would have interconnected with the proposed Empire State Pipeline, which when constructed will serve central and western New York State.

Shortly after the Board released its decision, **TransCanada's** counsel indicated to the Board that **TransCanada** anticipated filing an application requesting the Board to review its decision. On July 29, certain parties associated with the

Blackhorse project met with the Board's Chairman, Vice-Chairman and Board Counsel. At that meeting, the possibility of the Board conducting a review of its decision was discussed.

On August 2, **TransCanada**, on behalf of itself and other parties associated with the Blackhorse project, filed an application requesting the Board to conduct a review of its Blackhorse decision. On August 9, the Board decided to abridge its usual two step review process and announced that it had been persuaded by the applicants' arguments that a review was justified.

On 30 August, **CNG Transmission Corporation** filed a motion with the Federal Court Trial Division seeking leave to appeal the Board's decision of 9 August to review its Blackhorse Extension decision. **CNG** requested the Court to quash the Board's decision to conduct a review of its Blackhorse decision and to prohibit all current Board members from participating in any subsequent review of that decision.

On 9 September, **CNG** filed a notice of Application for Leave to Appeal with the Federal Court of Appeal seeking leave to appeal the Board's decision of 9 August 1991 to review the Blackhorse decision. **CNG** filed that application to address the possibility that the Federal Court Trial Division might rule that it lacked jurisdiction to deal with **CNG's** motion. **CNG** requested that the Court not process the application for Leave to Appeal unless a ruling that the Trial Division lacked jurisdiction to deal with the motion was received.

On 18 October 1991, the Federal Court Trial Division ordered that the Board discontinue its review and that Messrs. Priddle and Fredette refrain from participating in any subsequent review that may be conducted regarding the Blackhorse decision.

TransCanada PipeLines Limited, ANR Pipeline Company, Rochester Gas & Electric Corporation and St. Clair Pipelines Limited - Blackhorse Extension

By application dated 6 August 1991 **TransCanada PipeLines Limited, ANR Pipeline Company, Rochester Gas & Electric Corporation** and **St. Clair Pipelines Limited** applied to the **Federal Court of Appeal** for leave to appeal the Board's Blackhorse Extension decision. The ground for appeal was that the Board had erred in law by basing its decision on a finding that was not supported by the evidence before it. In particular, the applicants cited the Board's conclusion that there were less expensive and environmentally superior means of delivering gas to the proposed markets of the Empire State Pipeline in a timely fashion. The applicants argued that this conclusion was at odds with evidence which had been adduced at the Blackhorse Extension hearing.

The applicants requested the **Court** to defer consideration of their application pending the outcome of their application for review to the Board.

Hydro-Québec, le Procureur général du Québec and the Grand Council of the Crees (of Québec) / the Cree Regional Authority (EH-3-89)

On 26 October 1990, **Hydro-Québec** and the **Grand Council of the Crees (of Québec) /** the **Cree Regional Authority** (jointly referred to hereafter as the **"Crees"**) filed applications in the Federal Court of Appeal for leave to appeal the Board's decision of August 1990 to issue licences to **Hydro-Québec** for exports of firm electricity to the **Vermont Joint Owners** and the **New York Power Authority**.

Hydro-Québec's grounds for appeal were that the Board exceeded its jurisdiction when the Board made the licences subject to conditions that these shall remain valid to the extent that any production facility required by **Hydro-Québec** to supply the authorized exports, for which construction had not been authorized at the time of completion of the hearing, will have been subjected, prior to its construction, to the appropriate environmental assessment and review procedures as well as to the applicable environmental standards and guidelines in accordance with federal government laws and regulations. **Hydro-Québec** argued that its generation facilities are local works under the exclusive jurisdiction of the province of Québec, and thus not subject to federal regulation. **Hydro-Québec** further argued that federal regulation of its proposed production facilities would unduly duplicate Quebec's review processes and standards. The **Crees** argued that the Board erred in applying *Bill C-23*, which came into force on 1 June 1990, to the applications of **Hydro-Québec** because they were filed with the Board prior to the coming into force of *Bill C-23*. The **Crees** submitted that the Board had to apply paragraph 118(b) of the *Act* (as it read before the coming into force of *Bill C-23*) to the applications of **Hydro-Québec** and determine whether the export price was just and reasonable and in the public interest. The **Crees** argued that the Board could not make this finding as **Hydro-Québec** had filed insufficient evidence.

On 31 October 1990, the Board was served with the application of **le Procureur général du Québec** for leave to appeal. In addition to the grounds raised by **Hydro-Québec**, **le Procureur génér**al argued that the *Environmental Assessment and Review Process Guidelines Order* does not apply to the Crown in right of a province and that the provisions of paragraph 119.06(2)(b) of the *Act* directing the Board to have regard to the environmental impacts of electricity exports are unconstitutional.

On 28 November 1990, the Federal Court of Appeal granted the applications of all three appellants for leave to appeal.

Le Procureur général, Hydro-Québec and the **Crees** filed their notices of appeal on 7, 10, and 18 December 1990, respectively.

The appeals were heard in Montreal from 10 to 14 June 1991. The Court denied the **Cree's** appeal and allowed those by **le Procureur général** and **Hydro-Québec**.

In its decision the Court first considered the Board's power to make **Hydro-Québec's** export licences subject to environmental conditions pertaining to upstream production facilities. The Court found that the Board could only impose such conditions if its jurisdiction could be said to extend to such production facilities. In answering this question the Court looked to the *National Energy Board Act*, and - in particular - to the definition of "export" contained in that *Act*. (Section 2 of the *Act* defines "export" to mean - with reference to power - to send from Canada by a line of wire or other conductor power produced in Canada.) The Court found that the export of power and the production of power are two distinct activities. As the Board's mandate under the *Act* is limited to considering the export of power, the Court held that the Board lacked the necessary statutory authority to impose conditions in respect of upstream production facilities. On that basis, the court ruled that the Board exceeded its jurisdiction in including the two environmental conditions in **Hydro-Québec's** export licences.

The Court concluded that, as the two impugned conditions could be disassociated from the licence, and there was nothing in the Board's *Reasons for Decision* to suggest that, within the limits of its jurisdiction, the Board had reasons for refusing to grant **Hydro-Québec's** application, that the quashing of the conditions should not result in a quashing of the Board's entire decision.

The Court next considered the arguments raised by the **Crees**. The Court ruled the **Crees'** argument that the Board had incorrectly applied *Bill C-23* in considering **Hydro-Québec's** export application failed on two grounds. First, the Court found that the Board was correct in applying the procedural aspects of *Bill C-23* to **Hydro-Québec's** application, in that such practice was consistent with the general principles of statutory construction. The **Crees** had also argued that the application of *Bill C-23* to **Hydro-Québec's** application constituted a breach of the rules of natural justice. The Court dismissed this argument, noting that the **Crees** had complete latitude at the hearing to act on their clear understanding that the coming into effect of *Bill C-23* could affect the decision rendered.

Finally, the Court ruled that, in any event, the **Crees'** argument vis-a-vis *Bill C-23* led nowhere as, in making its decision, the Board had employed pre-*Bill C-23* criteria in assessing **Hydro-Québec's** application. On that basis, the Court concluded the **Crees** *Bill C-23* argument to be untenable.

The Court then went on to consider the **Crees'** second ground of appeal. In making its decision the Board made a finding that the proposed export price was just and reasonable, and that it would recover an appropriate share of costs incurred in Canada. On appeal, the **Crees** argued that the Board could not have validly arrived at such a conclusion as it had no "direct" evidence on this matter before it. The Court found that there was no requirement that the Board base its conclusion upon direct evidence exclusively. The Court noted that, at the original export licence hearing, the Board had before it the testimony of a series of witnesses and the abundant documentary evidence submitted by **Hydro-Québec** on the question of profitability. It also had before it evidence

that the **Government of Québec** had approved the export contract because of the clear benefit the province would derive from it. The Court concluded that the evidence, while not all direct, carried a strong persuasive force. The Court found that the Board had been persuaded by the evidence, and did not see a basis upon which it could undertake to dispute the Board's conclusion. The Court also noted that courts have historically been hesitant to dispute findings of fact made by administrative tribunals.

On 30 October 1991, the **Crees** and the **Cree Regional Authority** filed an application for leave to appeal with the Supreme Court of Canada.

Prophet River Indian Band - Adsett Pipeline

In conjunction with the commencement of the GH-6-90 public hearing to consider an application by **Westcoast Energy Inc.** respecting the Adsett pipeline project, the Board issued an "Environmental Screening Document" prepared pursuant to the *Environmental Assessment and Review Process Guidelines Order ("EARP Guidelines Order")*, which contained the Board's findings concerning the initial assessment of the Adsett project as required by the *EARP Guidelines Order*. On 11 April 1991, the **Prophet River Indian Band** applied to the Board by Notice of Motion pursuant to Section 21(1) of the *National Energy Board Act* for a review of those findings.

On 13 May 1991 the Board denied the application for review by the Band on the basis that the *EARP Guidelines Order* does not contain a provision authorizing an initiating department to review its screening findings. Nor did the Board think that it was open to the **Band** to utilize the statutory authority of the *National Energy Board Act* to review the Environmental Screening Document, which was created pursuant to the *EARP Guidelines Order*. On 11 June 1991, the **Band** sought leave to appeal from the Federal Court of Appeal the Board's decision denying its application for review.

Subsequent to the filing of the Notice of Motion for leave to appeal, interested parties were requested to file written submissions with the Federal Court.

TransCanada PipeLines Limited / Western Gas Marketing Limited and Niagara Mohawk Power Corporation - Gananoque Extension

On 18 March 1991, the Board released its decision (with reasons to follow) denying an application by **TransCanada Pipelines Limited** to construct the Gananoque Extension.

The Gananoque Extension application contemplated the construction of a pipeline which would run south from **TransCanada's** mainline just east of Kingston, Ontario, south across the St. Lawrence River to upper New York State.

There it would connect with a pipeline which would in turn connect with the **Niagara Mohawk Power Corporation** gas distribution system.

On 17 April 1991 **Niagara Mohawk** and **TransCanada/Western Gas Marketing Limited** each filed a notice of motion with the Federal Court of Appeal for an order granting them leave to file an application for leave to appeal 30 days following the release of the Board's Reasons for Decision in GH-4-90.

Niagara Mohawk and **TransCanada/WGML** made this motion to preserve their rights of appeal. In the absence of the order sought, it is arguable that the 30-day limitation period provided for in subsection 22(1.1) of the *Act* would have expired 30 days following the release on 18 March 1991 of the Board's GH-4-90 Decision with reasons to follow.

The Board released its GH-4-90 Reasons for Decision on 20 June 1991. By letter dated 17 January 1992, **TransCanada** withdrew its motion. By letter dated 20 January 1992, **WGML** withdrew its motion. By letter dated 4 February 1992, **Niagara Mohawk** withdrew its motion.

Trans-Northern Pipelines Inc. - Relocation of Pipeline at St. Eustache Mall

In March 1991, **Trans-Northern Pipelines Inc.** filed a notice of motion with the Federal Court of Appeal for leave to appeal the Board's decision of 11 February 1991. That decision affirmed Order MO-22-89 of 21 December 1989, which ordered **Trans-Northern** to relocate a section of pipeline located under the St. Eustache Mall. **Trans-Northern** sought the determination of the following two issues:

- whether the Board had jurisdiction under subsection 48(1) of the *National Energy Board Act* to order the relocation of a pipeline; and
- whether the Board erred in law or exceeded its jurisdiction in making its 21 December 1989 decision, in that there was no evidence before it indicating a material change in facts or circumstances since the time the Board originally approved the construction of the pipeline in 1967.

On 16 May 1991 the Federal Court of Appeal heard the motion orally and on the same day dismissed **Trans-Northern's** application for leave to appeal.

Treaty 8 Tribal Association and the Doig River Indian Band - British Columbia/Alberta Border Crossings

On 10 January 1991 the **Treaty 8 Tribal Association** and the **Doig River Indian Band** filed a notice of motion with the Federal Court to Appeal for leave to appeal the Board's decision of 13 December 1990 to approve an application by **Canadian Hunter Exploration Ltd.** to construct three 1 363 metre segments of interprovincial pipeline spanning the British Columbia/Alberta border.

The first ground for appeal was that the Board had denied the two groups procedural fairness by not providing them with an opportunity to comment on **Canadian Hunter's** 6 November 1990 reply to the comments previously made by the **Treaty 8 Tribal Association** and the **Doig River Indian Band**. The second ground of appeal was that the Board failed to provide a public hearing to the applicants whose constitutionally protected treaty rights could not be affected without such a hearing.

On 2 May 1991 the Federal Court of Appeal granted the **Treaty 8 Tribal Association** and the **Doig River Indian Band** leave to appeal the Board's 13 December 1990 decision.

The appeal is expected to be heard in early 1992.

Frontier Oil and Gas

Introduction

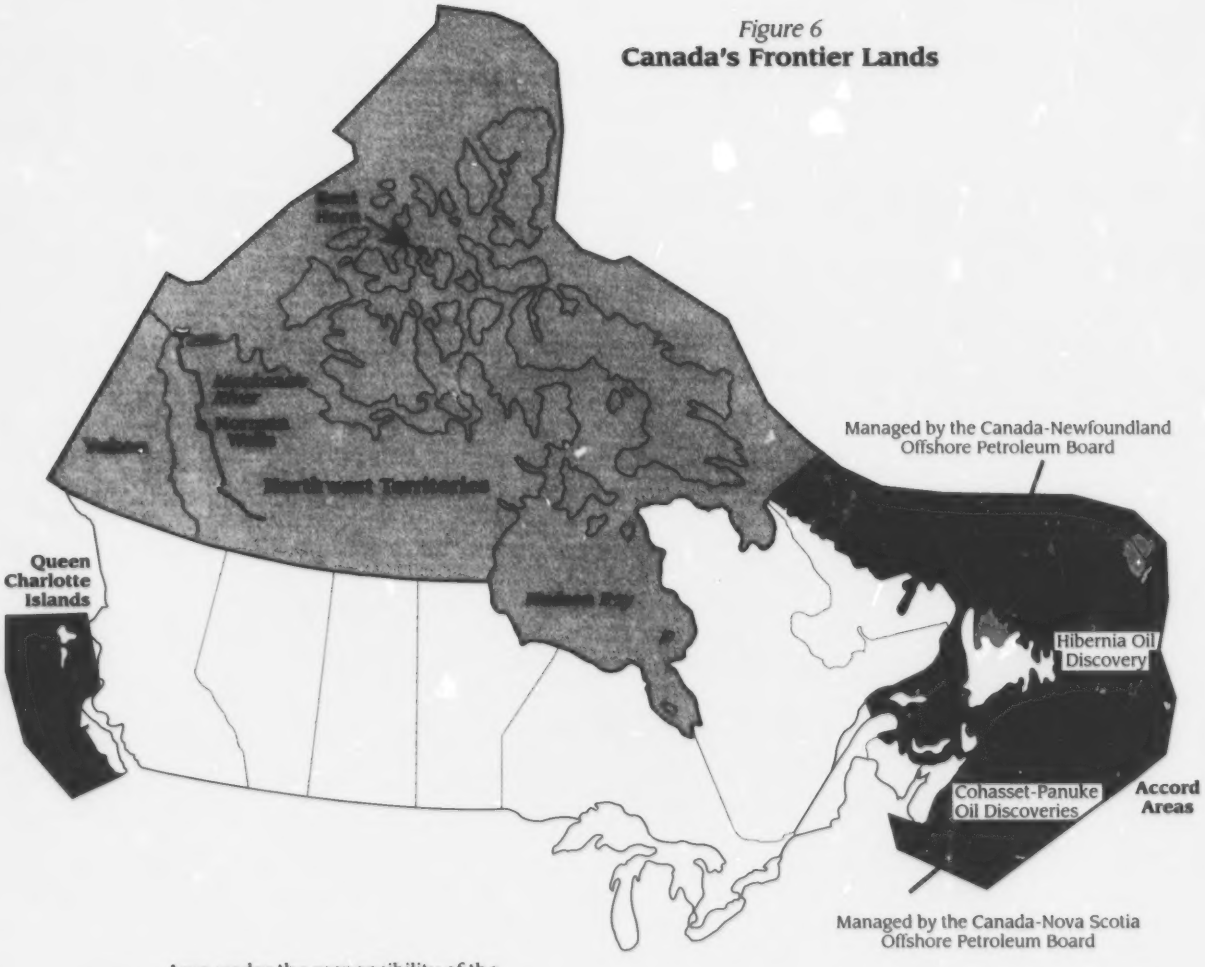
With the disbandment of the **Canada Oil and Gas Lands Administration**, the National Energy Board has acquired new responsibilities - which are distinctly different from the Board's traditional regulatory responsibilities - for oil and gas operations on a portion of Canada's frontier lands. These encompass the regulation of exploration for oil and gas, and the development and production of oil and gas resources in a manner that promotes worker safety, protects the environment and conserves hydrocarbon resources.

The Board's jurisdiction for frontier activities applies to a portion of Canada's frontier lands. The Federal Government has joint responsibility with the **Provinces of Newfoundland and Labrador** and **Nova Scotia** for oil and gas activities offshore of much of the east coast of Canada, exercised through the **Offshore Petroleum Boards**. A similar joint management regime is contemplated for the North, but not until the Northern Accord is in place. However, for the time being, the Federal Government retains sole responsibility for oil and gas activities in areas not subject to accords, that is, north of 60°, in Hudson Bay, parts of the Gulf of St. Lawrence and for West Coast waters beyond provincial jurisdiction.

For the National Energy Board to assume decision-making authority in non-Accord areas, legislation which presently governs the regulation of oil and gas activities - the *Oil and Gas Production and Conservation Act ("OGPCA")*, the *Canada Petroleum Resources Act* and the *National Energy Board Act* - needs to be amended. Until the legislative amendments are passed, regulatory approvals will continue to be formally authorized by the Chief Conservation Officer, appointed under the provisions of the *OGPCA* on behalf of the **Minister of Energy, Mines and Resources** (for activities south of 60°) and the **Minister of Indian Affairs and Northern Development** (for activities north of 60°) with the advice and assistance of the National Energy Board on technical matters.

The regulatory review process starts with an environmental assessment on each project in accordance with the *Environmental Assessment and Review Process Guidelines Order ("EARP Guidelines Order")*. The responsibility for safety, environmental protection and resource conservation is exercised through individual authorizations for each activity, such as geophysical surveys, drilling programs and development plans, and related studies. During the regulatory process a technical assessment is conducted by Board staff who consider geological, geophysical engineering, environmental and resource conservation factors, contingency plans and financial liability regimes. The objective of this assessment is to enhance worker safety, minimize risks to the environment and

Figure 6
Canada's Frontier Lands


Managed by the Canada-Newfoundland Offshore Petroleum Board
Queen Charlotte Islands
Hibernia Oil Discovery
Cohasset-Panuke Oil Discoveries
Accord Areas
Managed by the Canada-Nova Scotia Offshore Petroleum Board
Area under the responsibility of the Minister of Energy, Mines and Resources (Regulated by the National Energy Board)
Area under the responsibility of the Minister of Indian Affairs and Northern Development (Regulated by the National Energy Board)

ensure that the activity can be and is performed in a technically appropriate manner that adheres to sound conservation practices. Subsequently, any recommendations or conditions resulting from the assessment are incorporated in the regulatory approval. After operations begin, inspections of northern activities are conducted by the Board from the Board's Yellowknife office to enforce the provisions of the technical and safety regulations promulgated under the *OGPCA* and the *Canada Labour Code*. Inspections of environmental measurement, observation and forecasting facilities are conducted by staff from the headquarters office for Accord areas of the east coast as well as elsewhere on frontier lands.

Other Board activities related to frontier oil and gas include: estimation of discovered and potential hydrocarbon resources; evaluating and assessing field performance; providing a repository for reports and materials submitted by industry; fostering research programs to develop the knowledge base required to discharge regulatory responsibilities; and providing technical and environmental advice to the **Ministers of Energy, Mines and Resources** and **Indian Affairs and Northern Development**.

The Board assesses the environmental effects of all proposed activities in waters under joint management as well as elsewhere on frontier lands. Responsibility for observing the provisions of the *Environmental Assessment and Review Process* for oil and gas activities on all frontier lands is also undertaken by the Board, as well as for projects by the **Environmental Studies Research Fund ("ESRF")** and the **Program on Energy Research and Development ("PERD")**. The Board also manages and promotes research funded by **ESRF** and **PERD**.

Federal - Provincial - Territorial Arrangements for the Management of Frontier Lands

Yukon and Northwest Territories

Rights management in the North is now the responsibility of the **Northern Oil and Gas Directorate** of the **Department of Indian Affairs and Northern Development**. The Board provides advice on matters which relate to terms and conditions for land issuance, such as geological potential, operational constraints and the environment. Environmental assessment of the areas under consideration for land issuance is carried out by the Board.

The 1991 round of land issuance in the Mackenzie Delta-Beaufort Sea was completed on 25 November when bids were opened for four parcels. Successful bids were announced by the **Minister of Indian Affairs and Northern Development** on 9 December. The three parcels on the Mackenzie Delta - the first to be issued onshore in 25 years - attracted a combined total bid of $53.3 million from **Shell Canada**. The fourth parcel in the central Beaufort Sea was awarded to a consortium led by **Chevron Canada Resources** and **Amoco Canada Petroleum Company Ltd.**. A parcel offered on Cameron Island in the Arctic Islands earlier in the year failed to attract bids.

Non-confidential geological, geophysical and engineering data relating to exploration in the Territories may be viewed at Board headquarters in Calgary and in the Board's Yellowknife office. Drilling samples and core from exploratory wells are stored and available for viewing at the **Institute of Sedimentary and Petroleum Geology** in Calgary.

Nova Scotia

Oil and gas activities offshore of Nova Scotia are regulated by the **Canada-Nova Scotia Offshore Petroleum Board ("CNSOPB")**. Staff of the National Energy Board review the environmentally significant effects of proposed activities in these areas on behalf of the **Minister of Energy, Mines and Resources** and provide technical advice to the Minister and the **Canada-Nova Scotia Offshore Petroleum Board** on request.

The Dartmouth curation and laboratory facility, originally part of the **Canada Oil and Gas Lands Administration**, is now the joint responsibility of the **Canada-Nova Scotia Offshore Petroleum Board** and the **Department of Energy, Mines and Resources**.

With the concurrence of the **Canada-Nova Scotia Offshore Petroleum Board** non-confidential geological, geophysical and engineering data for the Nova Scotia offshore may be viewed at the National Energy Board headquarters in Calgary.

Newfoundland and Labrador

Oil and gas activities in waters around Newfoundland and offshore of Labrador are regulated by the **Canada-Newfoundland Offshore Petroleum Board**. Staff of the National Energy Board review the environmental significance of proposed activities in these areas on behalf of the **Minister of Energy, Mines and Resources** and respond to requests for advice from the Minister and the **Canada-Newfoundland Offshore Petroleum Board** on other technical and engineering matters.

During 1991, the Board participated in the environmental monitoring of the Hibernia project through its membership on the **Hibernia Construction Site Environmental Management Committee** and its involvement in the **Energy, Mines and Resources** Hibernia Monitoring Program.

Exploration Activity on Frontier Lands

A total of 14 wells were drilled to total depth on Canadian frontier lands in 1991: nine of these wells were drilled north of 60° on frontier lands for which the National Energy Board now has regulatory responsibilities; three wells were drilled off the coast of Nova Scotia, and two wells in the Jeanne d'Arc Basin on the Grand Banks of Newfoundland.

The East Coast

Activity off the Nova Scotia coast centered around the Panuke-Cohasset development project, operated by **LASMO Nova Scotia Limited**. The Panuke J-99 PP1 well was completed from the J-99 production platform location and three additional production wells were commenced and suspended at shallow depth, to be completed early in 1992. Lawrence D-14 was drilled 8 kilometres north of Cohasset and abandoned early in 1991 as a dry hole. A second exploratory well, Balmoral M-32, was subsequently drilled on a separate closure close to the Panuke Field and discovered additional developable oil reserves for the Panuke-Cohasset project. Two seismic programs were shot in the vicinity of Panuke-Cohasset by **Nova Scotia Resources Ltd.** and by **LASMO**.

Exploration drilling from the semi-submersible M.V. *Treasure Searcher* in the Jeanne d'Arc Basin east of Newfoundland involved the drilling of two wells, BP et al. Thorvald P-24 and Mobil Oil Canada Properties Botwood G-89. Neither resulted in a discovery and both were subsequently abandoned.

Several geophysical parties were active off both the east and west coasts of Newfoundland. In the Jeanne d'Arc Basin, the Hibernia Development Company completed a large three-dimensional seismic program over the Hibernia field, and a site survey was conducted for **Mobil** at the Botwood wellsite. Four programs were conducted off the west coast of Newfoundland, three to evaluate offshore exploration licences issued by the **Canada Newfoundland Offshore Petroleum Board** in 1990, and a fourth to complete a speculative survey.

The North

In 1991 nine wells comprising four exploratory, four delineation and one production well were drilled in the Northwest Territories and the Yukon.

Geophysical operations were significantly reduced compared with 1990, due to lack of any activity in the Beaufort Sea. There was limited activity in the Mainland Territories.

Mackenzie Delta-Beaufort Sea

For the first time in many years, no offshore wells were drilled in the Beaufort Sea. One onshore exploratory well, Esso Tuk E-20, was drilled near

Tuktoyaktuk. The well was drilled to a total depth of 3 173 m then plugged and abandoned as a dry hole.

Geophysical activity decreased dramatically compared to 1990 with no regional or site surveys in the offshore. **Shell Canada** conducted one three-dimensional seismic program on the Mackenzie Delta, which covered 74 square kilometres over the Unipkat discovery. This interest in the onshore delta was apparent in December when **Shell** announced a substantial drilling program on new exploration licences acquired in the 1991 call.

Mainland Territories

Of the eight wells drilled and terminated in the Mainland Territories in 1991, three were exploratory, four were delineation wells and one was placed on production.

Chevron Canada Resources Ltd. drilled two exploratory wells near Fort Good Hope in the Mackenzie Valley at Sperry Creek N-58 and Ramparts River F-46. The wells were drilled to total depths of 2 160 m and 1 510 m respectively and subsequently plugged and abandoned.

Paramount Resources concentrated its drilling program in the Cameron Hills area. The year concluded with five wells drilled to total depth. Cameron B-25, an exploratory well commenced in 1990, was re-entered, drilled to 1 649 m and suspended as an oil and gas well. Four delineation wells were drilled with the following results: Cameron C-19 and Cameron M-73 reached 1 673 and 1 657 m respectively and were successful oil and gas wells; Swede G-21 reached 1 652 m and was completed as an oil well; while Swede A-52 was plugged and abandoned at a total depth of 1 610 m.

Paramount also re-entered eight previously drilled Cameron Hills wells to conduct further testing. Cameron J-62, I-16, B-08, C-50, N-28, A-68 (gas wells) as well as Cameron J-37 and M-73 (oil and gas wells) were tested then plugged and suspended.

In the southeastern corner of the Yukon Territory, **Columbia Resources** re-entered Kotaneelee I-48, tested and later plugged and abandoned the well. Kotaneelee I-48A was later sidetracked from the I-48 well-bore, drilled to a total depth of 3 915 metres and completed as a production well.

Geophysical activity increased marginally in 1991 with three seismic programs conducted. In the Fort Norman area, **Chevron Canada Resources** acquired 242 kilometres of seismic with gravity measurements, part of a vibroseis program by **Mobil Oil Canada** crossed the border from British Columbia into the Northwest Territories, and **Esso Resources** acquired vibroseis data on the ice of the Mackenzie River at Norman Wells.

Two field geology programs took place in the Yukon: **Arco Alaska Inc.** extended a field program from the United States border into the northern Yukon and **Chevron Canada Resources** undertook a field study in Eagle Plain.

Arctic Islands, Eastern Arctic, Hudson Bay, Gulf of St. Lawrence and West Coast Offshore

In the High Arctic, **Panarctic** re-entered five of its previously suspended gas wells. In the Drake field, Drake Point I-67 and Drake F-16 were secured for long-term suspension. In the Hecla field, Hecla F-62 and E. Hecla C-32 were secured for long-term suspension, while Hecla I-69 was tested then plugged and abandoned.

Seismic operations in the Gulf of St. Lawrence were confined to waters under the jurisdiction of the **Canada-Newfoundland Offshore Petroleum Board**.

Waters off the west coast of British Columbia and in Hecate Strait continue to be a federal responsibility. A moratorium on petroleum exploration is in effect pending the implementation of recommendations of the **West Coast Offshore Exploration Environmental Assessment Panel** and a renewal of negotiations on the Western Accord.

Resource Evaluation Activities

Evaluation of Hydrocarbon Potential

New exploration results from northern seismic and drilling operations were evaluated and contributed to continuing studies of potential in the Southern Territories, Mackenzie Corridor, Peel Plateau, the Mackenzie Delta and the Beaufort Sea. These studies are the basis for advice on the hydrocarbon potential and relative prospectivity of northern lands to government and local groups. The opinion of Board staff was solicited by the **Northern Oil and Gas Directorate** of the **Department of Indian Affairs and Northern Development** on technical matters relating to prospect size and distribution in areas being considered for Calls for Nominations, on operating practice and on costs for geophysical surveying in the North.

As part of the Board's continuing involvement with the hydrocarbon resource assessment function of the **Geological Survey of Canada**, geological parameters were contributed to the Western Canada Gas Assessment for gas plays north of 60° and anticipatory studies for an oil and gas assessment of the Mackenzie Corridor continued. The Board also reviewed hydrocarbon prospectivity in the proposed Bluenose Lake National Park as part of a Mineral and Energy Resource Assessment and completed a report on the Old Crow Basin in the northern Yukon which was used in evaluating proposals for national parks and hydrocarbon resource potential by the **Departments of the Environment** and **Indian Affairs and Northern Development**.

Developments relating to the evaluation of lands under the management of the **Offshore Petroleum Boards** were monitored, fostering an understanding of oil and gas potential across the entire frontier lands. Based on this broad overall view, the **Minister of Energy, Mines and Resources** was advised on the implications of an assessment of the resource potential of the Jeanne d'Arc Basin on the Grand Banks released by the **Geological Survey of Canada**.

Recommendations on Significant Discovery Areas

Evaluation studies were undertaken to assist in determining areas for three Significant Discoveries in the Beaufort Sea. A recommendation on Significant Discovery Area at Esso PCI-Home et al. Isserk I-15 was made to the **Department of Indian Affairs and Northern Development**. Work continues on Nipterk P-32 and Kingark J-54.

The Board reviewed technical recommendations made by the Oil and Gas Committee on the Significant Discovery Area for the Minuk I-53 well in the Beaufort Sea.

Conservation and Development

Mainland Territories

Norman Wells

Waterflood performance from the Norman Wells field continued to show slight improvement over that of the previous year. Oil production for 1991 was 1.894 million m^3, an increase from 1.841 million m^3 in 1990. The peak daily average oil production of 5 334 m^3 per day occurred during the month of April. As of 31 December 1991, the cumulative oil production for the field reached 15.886 million m^3. Gas production increased slightly from 126 million m^3 in 1990 to 130 million m^3.

Facility changes included the addition of water injection pumps plus the upgrading of the existing pumps to expand the water injection capacity. Work on the slop oil naturalization tank continued, with installation expected in 1992. Other field activities included the expansion of the field automation system, modifications to the water injection lines and repairs to the artificial island and causeways to maintain their original design profiles.

At year end the well count was established at 165 producers and 156 injectors.

Kotaneelee

The Kotaneelee gas field operated by **Columbia Gas Development of Canada Ltd.** previously produced gas intermittently from February 1979 to November 1980. The facilities were mothballed and the wells suspended in 1983. In 1990 the operator applied for and received approval to amend the Kotaneelee Development Plan which included the upgrading of the facilities and workovers on the wells Columbia et al. Kotaneelee YT I-48 and B-38. Kotaneelee YT I-48 had to be abandoned, while YT I-48A was sidetracked and drilled to total depth. The field was placed back on production in February 1991. Total production for 1991 was 227.2 million m^3 with the cumulative production for the field being 272.7 million m^3.

Pointed Mountain

Addition of gas compression and dehydration units at the wellheads was responsible for a slight production increase from the Pointed Mountain gas field. Gas production in 1991 was 90 million m^3 compared to 74 million m^3 in 1990. Cumulative production to 31 December 1991 reached 8.405 billion m^3.

Cameron Hills

Paramount Resources Ltd. submitted a Development Plan for the Cameron Hills oil field, which involved an initial testing and delineation drilling phase, followed by a pilot project contingent on early results and culminating in full-scale development should production warrant. The development plan is under review.

Arctic Islands

Bent Horn

Panarctic Oils Ltd. made one shipment of crude from its Bent Horn oil field on Cameron Island, N.W.T.. The M.V. *Arctic* left for Montreal with 24 579 m^3 of oil on 21 August 1991 and returned in September; however, the tanker was unable to load a second shipment due to adverse ice conditions.

Total field production for 1991 was 32 556.9 m^3, bringing the total cumulative crude oil production at Bent Horn to 256 816 m^3. There is presently 20 453 m^3 of oil in storage at the Bent Horn facility, of which 3 130 m^3 is stored in bladders.

Panarctic had submitted documentation in 1990 to amend its Bent Horn Development Plan to include the use of a winter road from the Bent Horn site to Rea Point. Approval of this project would allow **Panarctic** to produce 18 200 m^3 during the winter, transfer the oil via truck over an ice road to storage at Rea Point and allow the oil to be shipped in the summer open water season via tanker to market. The Development Plan amendment was approved. However, additional information was requested prior to the issuance of an amendment to the Production Operations Authorization. Additional documentation has been submitted by **Panarctic** and, if approved, the start up date for this project is expected to be the winter of 1993.

Legislation and Regulations

OGPCA Safety Amendments

In 1991 the Board in consultation with the **Department of Energy, Mines and Resources**, the **Nova Scotia** and **Newfoundland Departments of Natural Resources**, and the **Canada-Newfoundland** and **Canada-Nova Scotia Offshore Petroleum Boards** finalized proposed safety amendments to the *Oil and Gas Production and Conservation Act* and the related Accord legislation. The amendments are the final measures required to implement the remaining recommendations of the Royal Commission on the *Ocean Ranger* Marine Disaster. The amendments will improve the protection of the worker through a number of measures related to the assessment of installations and equipment and the training of personnel. One of the most significant recommendations requires that the installations and equipment be assessed and verified for compliance with regulations and for their fitness for purpose by a recognized certifying authority. In addition, the Board undertook an environmental assessment of the proposed amendments on behalf of the **Minister of Energy, Mines and Resources**.

Geophysical

The draft *Canada Oil and Gas Geophysical Regulations* for all geophysical operations on lands under federal jurisdiction are being reviewed by the federal Justice Department. Promulgation is expected in 1992, with the offshore Newfoundland and offshore Nova Scotia versions following shortly thereafter.

Drilling

The Board is assisting in the preparation of the Accord versions of the *Drilling Regulations*. The Newfoundland version is awaiting ministerial signature and will be published in *Part II* of the *Canada Gazette* in the near future. The Nova Scotia version was published in *Part I* of the *Canada Gazette* on 7 December 1991. Consequential amendments are being made to the Canada version of the drilling regulations. These amendments will incorporate reference to the *Installation* and the *Certificate of Fitness Regulations* and include some amendments to reflect certain modifications to the Accord versions. These regulations ensure that all measures affecting the safety of human life, the protection of the environment, and the conservation of hydrocarbon resources meet stringent standards before approval to drill is granted by the regulator.

Occupational Safety and Health

The Board is assisting in the preparation of the Accord versions of the *Occupational Safety and Health Regulations*. The drafting of the Newfoundland version of the regulations is near completion and should be ready for transmittal

to the **Department of Justice** in 1992. The Nova Scotia version, which will be similar to the Newfoundland version, should also be ready for transmittal to the **Department of Justice** in 1992. The regulations set out the measures and procedures that the industry must implement to ensure a safe and healthy workplace.

Production & Conservation

The Board is assisting the **Department of Energy, Mines and Resources** in preparing the Newfoundland and Nova Scotia versions of the *Canada Oil and Gas Production and Conservation Regulations*. The verification of the French translation of these regulations is nearing completion and the documents will be sent to the **Department of Justice** in 1992 for review. These regulations will cover the procedures and approvals for the orderly and efficient development and production of oil and gas discoveries in offshore Accord areas.

Due to the disbandment of the **Canada Oil and Gas Lands Administration** and its partial integration with the National Energy Board, the proposal to publish the Development Plan Application Guidelines under the *Canada Oil and Gas Production and Conservation Regulations* has been delayed until 1992.

Installations

The Canada and Accord versions of the *Installation Regulations* have been drafted in consultation with the **Department of Energy, Mines and Resources**, the **Nova Scotia** and **Newfoundland Departments of Natural Resources**, and the **Canada-Newfoundland** and **Canada-Nova Scotia Offshore Petroleum Boards**. These regulations establish the minimum technical requirements that must be adhered to in the design, construction, installation, inspection, operation, maintenance and repair of an installation. The draft regulations will be submitted to the **Department of Justice** early in 1992.

Certificate of Fitness

The *Certificate of Fitness Regulations* have been drafted and the French translation has been verified. These Regulations are part of the certification process that was recommended by the *Ocean Ranger* Commission and in the subsequent Harrison Task Force Report. The Regulations contain a listing of organizations approved to act as a certifying authority and the procedures for the issuance of a Certificate of Fitness. They also specify the minimum scope of work to be carried out by the certifying authority. The *Installation Regulations*, the *Certificate of Fitness Regulations* and the consequential amendments to the *Drilling, Diving and Production and Conservation Regulations* will be submitted to the **Department of Justice** early in 1992.

Diving

In 1991, expert assistance was provided by the Board to the **Marine Investigations Branch** of the **Department of Transport** with the underwater search, examination and salvage of two sunken vessels. **The Canada-Nova Scotia Offshore Petroleum Board** was also assisted with Diving Program Approvals and on site inspection and certification of diving personnel.

The diver certification process is a continuing activity and, as in previous years, a number of applications were processed from divers and dive-related personnel seeking certification under the *Canada Oil and Gas Diving Regulations*. To date, over two hundred individuals have been either certified or recertified under one of nine categories of specialization prescribed in the regulations. In addition, the **Institut Maritime de Québec** and **Seneca College of Applied Arts and Technology** were examined and subsequently approved as training centres for divers.

Amendments to the *Canada Oil and Gas Diving Regulations* and the draft *Nova Scotia Offshore Petroleum Diving Regulations* passed the **Department of Justice** examination and are being promulgated.

Canadian Standards Association

Board staff serve on the **Canadian Standards Association** Steering Committee for the development of the new **CSA** *Code for the Design, Construction and Installation of Fixed Offshore Structures*; its five technical committees, several subcommittees, and various related working groups. The development of the standards incorporated a modern approach to the design of offshore structures in that the design process is based on the "limited states" methodology. This approach to design has been coupled with an emphasis on specific conditions related to the Canadian environment such as low temperature, ice loading and unique structural type.

In connection with the development of this new Code, a major verification program was instituted. The verification program consists of two principal components: a requirement for expert review and comment on the five Preliminary Standards which constitute the Code, and a series of verification studies specifically designed to calibrate and/or verify the technical requirements contained in the Preliminary Standards.

During 1991 the verification studies approved by the **CSA Design Verification Subcommittee** dealt principally with the appraisal of uncertainties associated with the modelling techniques and the databases used to develop design criteria. Additionally the subcommittee reviewed the evaluation or verification of the adequacy of the technical requirements applied to the design of structural elements and components that comprise full-scale off-shore steel and concrete structures. These studies have confirmed that the Preliminary Standards provide a consistent, coherent design approach and that they are now suitable and ready

for use by designers of offshore platforms. Formal standards will be published by the **CSA** near the end of 1992.

Inspections

The Board inspected exploration and production sites to ensure that operations were conducted according to approved program and regulatory requirements. In 1991 seventeen drilling, seven production and two seismic inspections were conducted. In addition, fifteen suspended well locations were inspected.

The Board also inspected ice and iceberg, sea-state and weather measurement, observation and forecasting facilities to ensure compliance with regulatory requirements. In 1991 three forecasting facilities were inspected and the Board provided advice on physical environmental requirements for drilling activities to the **Canada-Nova Scotia** and **Canada-Newfoundland Offshore Petroleum Boards**, other government agencies, oil operators and contractors.

Lost-Time Accidents

In 1991 a total of five lost-time accidents were reported for the non-Accord frontier lands, two of which occurred at drill sites, two at production sites and one during a geophysical operation. There were no fatalities associated with oil and gas activities on the non-Accord frontier lands during the year.

Protection of the Environment

The frontier lands environmental mandate of the National Energy Board arises from regulatory responsibilities under the *Oil and Gas Production and Conservation Act*, the *Canadian Petroleum Resources Act*, the *Arctic Waters Pollution Prevention Act* and the *Environmental Assessment and Review Process Guidelines Order*. New environmental legislation (the *Canadian Environmental Assessment Act*), which will affect the role of the National Energy Board in its environmental assessment responsibilities, is expected in 1992.

In addition to responsibilities for environmental assessment of all oil and gas activities on Frontier Lands, the Board is responsible for regulatory administration, management of research and development activities and provision of technical expertise as appropriate to the **Minister of Energy, Mines and Resources**, the **Department of Indian Affairs and Northern Development**, and the **Canada-Nova Scotia** and **Canada-Newfoundland Offshore Petroleum Boards**.

To fulfill its obligations to promote the safety of oil and gas exploration and development activities in harsh environments and to protect the environment from these operations, the Board conducted a wide range of activities related to *EARP* and regulatory enforcement during 1991 under the aegis of the **Canada Oil and Gas Lands Administration** and the new Environment Directorate in the Board. In addition, through the **Panel of Energy Research and Development ("PERD")** and the **Environmental Studies Research Fund ("ESRF")**, the Board initiated, promoted and managed research and development required for environmental regulatory approvals of oil and gas activities and for the improvement of Canada's expertise in the oil and gas industry. They also consulted with federal, provincial and territorial government agencies, with industry, and the academic community in carrying out these responsibilities and establishing research program priorities.

East Coast

In response to a request by the **Department of Energy, Mines and Resources ("DEMR")** on behalf of the Minister, the Board developed and implemented a system for monitoring the status of responses to the recommendations of the *Report of the Environment Assessment Panel on the Hibernia Project Development*. Reports on the status of the responses were presented to the **DEMR** upon request.

The Board advised officials of the **DEMR** and the **Province of Nova Scotia** on the environmental requirements of the Richmond Terminal Access Road. They also participated in discussions with the **Canada-Nova Scotia Offshore Petroleum Board** and the **Department of the Environment** on methods to treat produced water from the Cohasset-Panuke development project.

Environmental assessments and reviews for regulatory approvals were conducted for one Drilling Program Approval (off Nova Scotia), four Authorities to Drill Wells (three off Nova Scotia and one off Newfoundland), one Authority to Conduct a Geophysical/Geological Program (off Nova Scotia), and two Offshore Development Fund projects (one in Newfoundland and the other in Nova Scotia).

The North

Beaufort Sea Drilling Operation Review

In September 1990, the **Beaufort Sea Steering Committee** was formed by the **Minister of Indian Affairs and Northern Development** to assess the concerns of the **Environmental Impact Review Board ("EIRB")** regarding government preparedness for an oil spill resulting from an oil well blowout in the Beaufort Sea. The Steering Committee was made up of representatives from the Inuvialuit, the Board, the petroleum industry, the territorial governments and the federal government, who have a direct interest in the management of exploration activity in the Beaufort Sea.

The Steering Committee reviewed the work of seven task groups set up to examine:

- government contingency plans for an oil well blowout;
- same season relief well capabilities;
- contingency plan testing and review;
- Inuvialuit involvement in contingency planning and cleanup operations;
- the costing of counter-measures and the development of a worst case scenario;
- compensation and financial liability;
- the nature and cost of remedial and mitigative measures possible in the Beaufort Sea;
- scientific processes relating to research to be undertaken in the event of a spill; and
- assessment methodology and databases.

Board staff chaired the Task Groups for 'Operating Seasons' and 'Worst Case Scenario', and participated in Task Groups on 'Remedial and Mitigative Measures', 'Compensation and Financial Responsibility', 'Research and Scientific Study', and 'Government Management'. The Board also provided input to the task group on 'Contingency Plan Testing'.

The report of the Steering Committee was presented to the **Minister of Indian Affairs and Northern Development** in April and listed 33 recommendations relating to concerns examined by the task groups. It is a comprehensive report comprising eight volumes. The National Energy Board is identified as the lead agency in responding to 14 of the 33 recommendations of the Committee. The Board participated in the Workshop on Implementation of the Recommendations in September and will be consulting with other Committee participants in putting the recommendations into effect.

While the **Beaufort Sea Steering Committee** was preparing its recommendations, the environmental review of the *Gulf Kulluk Drilling Program Approval* continued in consultation with the **Department of Fisheries and Oceans** and the **Arctic Waters Advisory Committee** to determine environmental conditions for the Program. This review was terminated when **Gulf** withdrew its application.

The Board reviewed two **Panarctic** proposals: one for over-ice trucking of crude oil from Bent Horn to Rea Point, and the other for over-wintering of crude in the bladder farm at the Bent Horn production site. The over-ice trucking project was proposed to ensure that a minimum of two oil shipments per year could be transported from **Panarctic's** production site at Bent Horn. The project was approved subject to the construction of berms around loading and unloading areas, and an acceptable contingency plan being in place. The work is expected to proceed in 1993. The project for storing the crude oil in bladders over the winter at Bent Horn arose from ice blocking the M.V. *Arctic*'s access during its second run of the year to the loading site. Upon concluding that the berm surrounding the bladders would contain any oil from potential leakages, the Board approved the over-wintering of the crude. The oil from the bladders will be pumped next year after mixing with newly produced oil.

The Board reviewed and recommended approval of **Paramount's** *Phase 1, Part 1, Extended Flow Testing and Pilot Project*, subject to contingency plan requirements. In consultation with other government departments, it was agreed that environmental reviews of subsequent parts of the project - those leading to full scale production - would be conducted at a later date as details of the proposed project were finalized. The operator was informed that an Environmental Protection Plan should be submitted for approval prior to development of further parts of Phase 1.

The Board also participated in the **Esso** Norman Wells Emergency Communication Exercise which was coordinated out of the Board's Yellowknife office.

Environmental assessments and reviews for regulatory approvals were conducted for two geological surveys in the Yukon Territory, two Authorities to Conduct Geophysical/Geological Programs in the Northwest Territories, five Authorities to Drill Wells in the Cameron Hills of the Northwest Territories, the **Panarctic** and **Paramount** Development Plans in the Northwest Territories and the Kotaneelee Sidetracking Program in the Yukon.

Other Activities

New *Physical Environmental Guidelines for Frontier Lands* were distributed. Whilst still a part of the **Canada Oil and Gas Lands Administration**, Frontier Environment also provided environmental items for the *Guidance Notes for Canada Oil and Gas Drilling Regulations* published in February 1991 and for the *Development Plan Application Guidelines* which will be published in 1992.

The Board provided input to **Environment Canada's** *Green Plan* initiatives from the oil and gas industry perspective. They also participated in the development of the new environmental assessment process legislation through reviews of drafts of the *Canadian Environmental Assessment Act* and participation in deliberations of the **Interdepartmental Committee on Environmental Assessment** and the **Regional Committees on Environment Assessment**.

To address environmental concerns relating to protecting oil and gas operations from the environment and the environment from those operations, the Board participated in the **Interdepartmental Panel on Energy Research and Development ("PERD") Task 6.0 Oil and Gas Committees**, by initiating, reviewing, approving, supporting and managing research projects. Further to meeting the changing requirements for Research and Development in support of oil and gas activities, Board staff partook in the decisions of the **PERD Panel** to reorganize the committee structure of **Task 6.0**.

Also, at the request of the **Departments of National Defence** and **Energy, Mines and Resources**, the Board provided advice on oil spills and environmental countermeasures related to the aftermath of the military confrontations in and around the Persian Gulf. Special briefings were presented to the Minister and Deputy Minister of **Energy, Mines and Resources**.

Research and Development

Research and development are integral to the functioning of the Frontier Group within the Board. The extreme environments of frontier lands require that new technologies be developed, assessed and implemented or that established technologies be adapted to these conditions. The results of the research will help improve technologies which enhance personnel safety and environmental protection requirements and refine drilling and evaluation technology. In addition to the research funding directed by the National Energy Board, research in these areas is promoted through other agencies via workshops, policy papers and participation in technical committees. Additionally, funding for a number of research projects is provided jointly with industry, other government departments and foreign governments to support those subject areas of common interest.

Panel on Energy Research and Development

Under the **Interdepartmental Panel on Energy Research and Development ("PERD")**, the Board chairs the **Task 6.2 Marine Engineering Committee**. The Board also serves on the **Petroleum Geoscience, Offshore Geotechnics, Materials, Transportation** and **Environment Committees** under **Task 6**. Through these committees, the Board promotes studies in evacuation technology, personnel safety, environmental protection, structures engineering, ice-structure interaction, environmental design criteria and petroleum geoscience. The major projects sponsored by **PERD** and managed by the Board are described below.

Personnel Safety

In 1991 personnel safety research focused on matters related to the safe evacuation of personnel from offshore drilling and production platforms, liferafts for downed helicopters, and the conceptual design of a system for monitoring the status of injured divers in a decompression chamber.

In relation to the evacuation from offshore platforms, the initial phase of a project to design a new system for evacuating personnel using a deployment arm for lowering a survival capsule into the ocean was supported. This deployment arm eliminates the need for cantilevering the survival capsule out from the platform, yet allows the capsule to be placed at a safe distance from the platform.

The project on helicopter evacuation involved optimizing the type of liferaft that should be carried aboard helicopters servicing offshore platforms.

The injured diver monitoring system involves the development of a working prototype of a through-hull penetrator and mating flange. The penetrator will be used for the passage of wiring into a decompression chamber for the monitoring of an injured diver. The mating flange will be adaptable to allow the transfer of an injured diver from one decompression chamber to another.

Ice-Structure Interaction

The Board chairs an advisory committee that prioritizes ice structure interaction research. Research in this area is directed to the collection and analysis of ice load field data, and the development of numerical models to be used in the assessment of ice-structure interaction. The 1991 field program included participation in a joint industry project on the development of spray-ice technology for application in the nearshore regions of the Beaufort Sea.

A project that involved the preliminary development of theoretical ice load models based on physics culminated in a workshop held to critically evaluate the models. Future research priorities for model development and field and experimental programs on ice-structure interaction were established.

Protection of Submarine Pipelines from Ice Scour

The safe design and operation of pipelines in the Arctic and Newfoundland offshore requires an understanding of the threat of ice scouring to the integrity of pipelines. A major project has been initiated, jointly with industry, towards the development of a scour model that will replicate the process occurring in the field. This multi-year research program consists of scale model testing and investigation of field events, the results of which are to be used in the development and calibration of a numerical scour model.

Environmental Design Criteria

During 1991 the **Marine Engineering Committee** funded a workshop for a major evaluation of the research being carried out on design environmental loads for offshore exploration and production systems. Representatives from national and international government, industry, and academic organizations participated in identifying research requirements and in developing recommendations for future research priorities.

Petroleum Geoscience

A contracted research project to evaluate the effects of oil-based mud on the recovery of palynomorph fossils was completed, marking the end of a series of contracts let on the effects of oil-based mud on evaluation techniques.

Environmental Studies Research Fund Programs

The **Environmental Studies Research Fund ("ESRF")** supports environmental and social studies related to the exploration and development of oil and gas resources on frontier lands. The program focuses on research needed for regulatory decision making on a regional or national basis and is administered by a small secretariat which previously resided in the **Environmental Protection Branch** of the **Canada Oil and Gas Lands Administration**. The secretariat was transferred to the Board and now resides in the Environment Directorate.

ESRF operates under the provisions of the *Canada Petroleum Resources Act ("CPRA")* and is directed by a twelve member Management Board. The Management Board consists of representatives from federal government departments, regional petroleum boards, petroleum industry organizations, and the general public. The chairman is currently the Director General of Environment Directorate of the National Energy Board. The program is funded by a levy on oil and gas companies that hold interests on frontier lands. For 1991 **ESRF** budget was $ 748,300 and the program consisted of nine new studies scheduled for start-up during 1991 and early 1992. These augmented a program of fourteen ongoing studies which had started in 1989 and 1990. The **ESRF** publishes reports on each study funded by the program in a series which currently has 106 titles in print.

Some of the studies recently completed are:

Development of a Beaufort Sea Wildlife Compensation Model

The project developed a compensation model based on a scientific and statistical methodology which accounts for actual losses in wildlife population, habitat and future harvests. This model, which also incorporates effects of remedial and mitigative measures, could form part of an overall Beaufort Regional Wildlife Compensation Agreement.

Sensitivity of Fish Eggs and Larvae to Petroleum Hydrocarbons on the Grand Banks

The study is to evaluate the potential effects of a major oil spill on the Grand Banks commercial fish species as a result of impacts of hydrocarbons on eggs and larvae. The study was performed in two phases: review and synthesis of information, and impact analysis carried out using the methodology of the National Resources Damage Assessment Model for Coastal and Marine Environments.

Beaufort Sea Extreme Waves Study

The study reviewed earlier hindcast studies, including the **Atmospheric Environment Services ("AES")** wind hindcast and the **Marine Environmental Data Service** wave hindcast, and identified solutions to overcome shortcomings such as shallow water and marginal ice zone effects. The identified solutions were utilized to develop and select an appropriate wave model to correctly hindcast waves in the Beaufort Sea. Hindcasts were conducted on a selected storm set and verified with field data. An extreme wave probability distribution was developed for deep water sites.

Development of a National Directory of Canadian Oil Spill Response Expertise

This project catalogues the body of Canadian experts within government, industry, the academic community and the public at large who could be available on short notice to assist with various phases of response in the event of catastrophic oil spills.

Table 3

Mainland Territories Statistical Summary

ACTIVITY STATUS	1987	1988	1989	1990	1991
Wells Spudded					
Exploratory/Delineation	1	3	6	11	7
Development	35	11	–	–	1
Total	36	14	6	11	8
Wells Terminated[a]					
Exploratory/Delineation	2	3	4	12	7
Development	36	11	–	–	1
Total	38	14	4	12	8
Metres Drilled	31 132	15 778	9 865	14 197	12 152
Exploratory/Delineation	974	7 095	9 865	14 197	11 517
Development	30 158	8 683	–	–	635
Geophysical Programs Run	5	9	9	2	5
Reflection Seismic km	149	1 729	1 600	181	321

[a] *In the Mainland Territories, where exploratory operations are generally restricted to the winter months, a well is deemed to be terminated in the year in which it reaches total depth, even though it may be reentered in the following year for testing.*

RESOURCES STATUS	1987	1988	1989	1990	1991[b]
Discovered Resources[c]					
Gas (billions of m^3)	20.8	20.8	21.8	35.5	22.7
Oil (millions of m^3)	37.2	37.2	37.7	37.7	39.1
Gas and Oil Production					
Pointed Mountain Gas (millions of m^3)	156	154	96[b]	74	90
Norman Wells Gas (millions of m^3)	163	138	129	126	130
Norman Wells Oil (thousands of m^3)	1 531	1 728	1 789	1 841	1 894
Kotaneelee Gas (millions of m^3)					227.2

[b] *Includes new discoveries and revisions to previous estimates.*
[c] *As reported in previous years.*

EXPENDITURES	1987	1988	1989	1990	1991
Rigs Active	3	3	5	6	5
Rig-Months	13	6	5	10	10
Money Spent (millions of $)					
Geophysical/Geological	2.4	8.7	12.6	2.8	2.5
Exploratory/Delineation/Workovers	4.4	6.3	11.5	26.3	18.8
Development Drilling	27.0	5.3	—	—	3.7
Production Facilities	30.5	5.3	—	—	—
Total Money Spent (millions of $)	**64.3**	**25.6**	**24.1**	**29.1**	**25.0**

Table 4

Mackenzie Delta and Beaufort Sea
Statistical Summary

ACTIVITY STATUS	1987	1988	1989	1990	1991
Wells Spudded					
Exploratory/Delineation	3	3	5	1	1
Wells Terminated[a]					
Exploratory/Delineation	3	4	4	2	1
Metres Drilled					
Exploratory/Delineation	8 344	13 438	11 273	1 614	3 173
Geophysical Programs Run	1	7	10	6	1
Reflection Seismic km	139	11 475[d]	19 483[d]	4 371	3 320[d]

[a] *In the Beaufort Sea, where operations are seasonal and could take place over a number of seasons for a given well, a well is deemed to be terminated in the year in which it reaches total depth.*
[d] *Includes three-dimensional seismic equivalent.*

RESOURCES STATUS	1987	1988	1989	1990	1991[b]
Discovered Resources[c]					
Gas (billions of m^3)	302.1	308.5	322.7	356.6	357.0
Oil (millions of m^3)	253.2	253.2	256.4	240.7	241.4

[b] *Includes new discoveries and revisions to previous estimates.*
[c] *As reported in previous years*

EXPENDITURES	1987	1988	1989	1990	1991
Rigs Active	3	2	4	2	1
Rig-Months	5	10	9	2	2
Money Spent (millions of $)					
Geophysical/Geological	0.2	27.6	36.6	16.6	4.2
Exploratory/Delineation/Workovers	108.6	99.0	196.6	18.9	4.9
Total Money Spent (millions of $)	**108.8**	**126.6**	**233.2**	**35.5**	**9.1**

Table 5

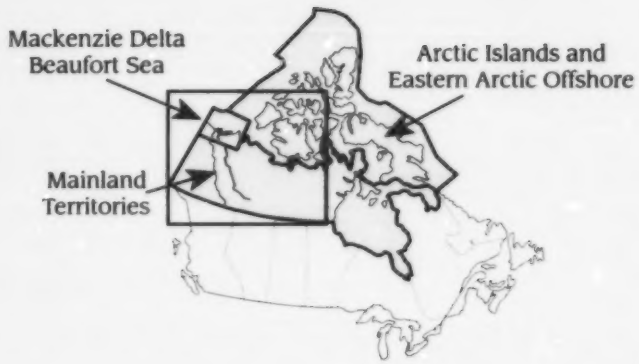
Arctic Islands and Eastern Arctic Offshore Statistical Summary

ACTIVITY STATUS	1987	1988	1989	1990	1991
Wells Spudded					
Exploratory/Delineation	1	0	0	0	0
Wells Terminated					
Exploratory/Delineation	1	0	0	0	0
Metres Drilled					
Exploratory/Delineation	689	0	0	0	0
Geophysical Programs Run	0	0	0	0	0
Reflection Seismic km	0	0	0	0	0

RESOURCES STATUS	1987	1988	1989	1990	1991
Discovered Resources					
Gas (billions of m^3)	416.4	416.4	416.4	416.4	416.4
Oil (millions of m^3)	65.7	65.7	65.7	65.7	65.7
Oil Production					
Bent Horn (thousands of m^3)	34.5	54.9	43.4	24.0	32.6

EXPENDITURES	1987	1988	1989	1990	1991
Rigs Active	1	0	0	0	0
Rig-Months	2	0	0	0	0
Money Spent (millions of $)					
Geophysical/Geological	0	0	0	0	0
Exploratory/Delineation/Workovers	8.3	0	0	0	2.7
Production Facilities	0.5	0	0	0	0
Total Money Spent (millions of $)	**8.8**	**0**	**0**	**0**	**2.7**

Figure 7
Northern Frontier Regions



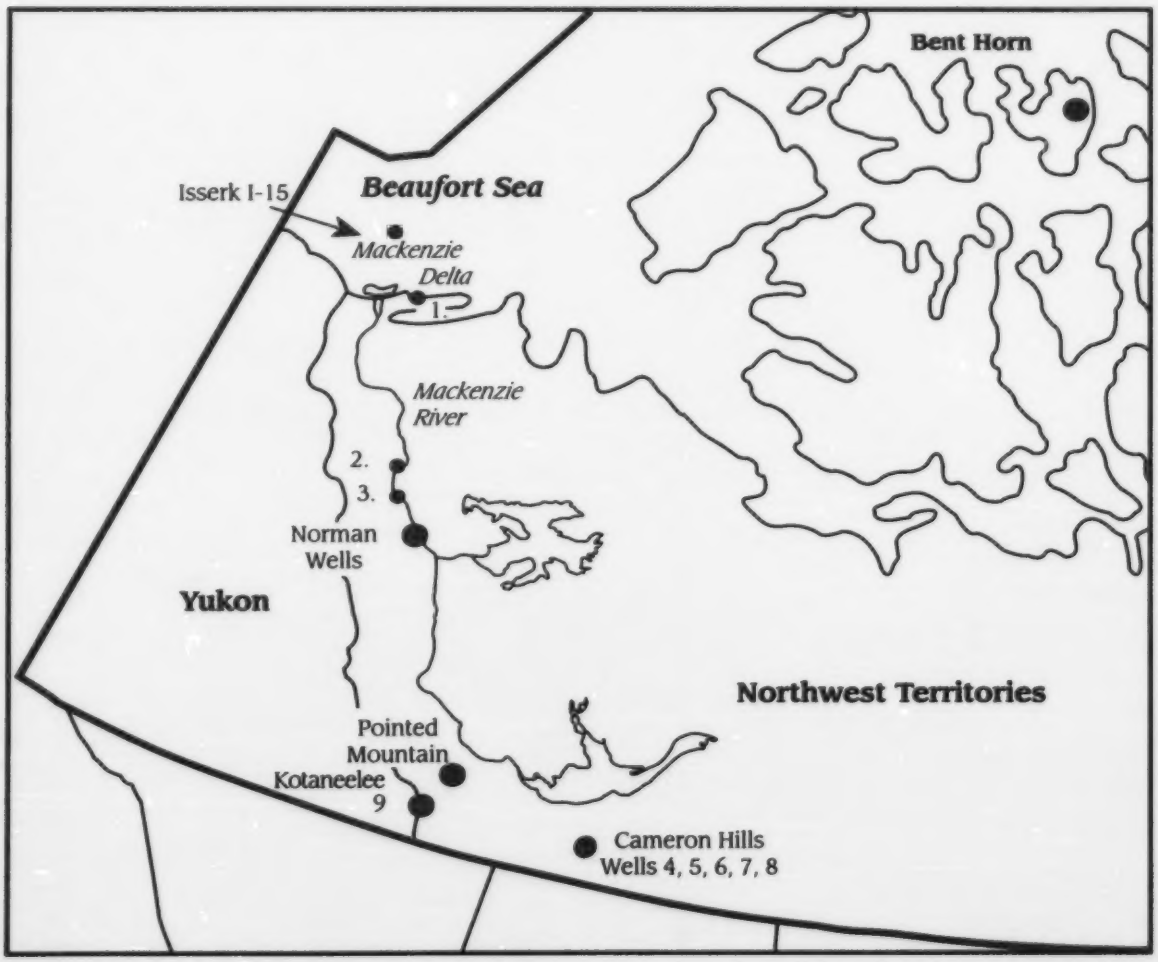


Table 6

Wells Drilled 1991

Map No.	Name of Well	Latitude, Longitude	Drilling Unit	Spudded, Reentered, Terminated	Status, Results	Total Depth (m)
1	Esso PCI Home et al Tuk E-20	69°19'18.7"N 133°04'59.9"W	Atco/Equtak 47E	91-01-25 91-04-08	Plugged & Abandoned	3173
2	Chevron Sperry Creek N-58	65°37'56.1"N 129°25'24.7"W	Shehtah 1	91-01-04 91-02-19	Plugged & Abandoned	2160
3	Chevron Ramparts River F-46	65°45'18.6"N 130°08'51.4"W	Shehtah 1	91-02-24 91-03-18	Plugged & Abandoned	1510
4	Paramount et al Cameron B-25	60°04'04.6"N 117°34'41.2"W	Sierra 3	91-01-27 91-02-10	Plugged & Suspended	1649*
5	Paramount et al Cameron M-73	60°02'51.9"N 117°29'31.9"W	Sierra 2	91-01-28 91-02-21	Plugged & Suspended	1657
6	Paramount et al Cameron C-19	60°08'07.3"N 117°33'08.0"W	Sierra 3	91-02-11 91-03-05	Plugged & Suspended	1673
7	Paramount et al Swede G-21	60°10'29.1"N 117°34'39.3"W	Command 2	91-01-20 91-02-10	Plugged & Suspended	1652
8	Paramount et al Swede A-52	60°11'09.3"N 117°39'46.8"W	Command 2	91-02-10 91-02-28	Plugged & Abandoned	1610
9	Columbia et al Kotaneelee YT I-48A	60°07'35.9"N 124°07'36.5"W	Kenting Hi Tower 7	91-05-19 91-07-18	Gas Producer	3915**

* *Upper 394m drilled in 1990*

** *Sidetracked from 3280m*

Table 7

Discovered Oil and Gas Resources in Frontier Areas (as of 31 December 1991)

	Crude Oil (Millions of Cubic Metres)	Natural Gas (Billions of Cubic Metres)
Mackenzie Delta/Beaufort Sea	241	357
Arctic Islands and Eastern Arctic Offshore	66	416
Mainland Territories	39	23
Nova Scotia Offshore (including Gulf of St. Lawrence)	24	153
Newfoundland Offshore	248	99
Labrador Offshore	7	82
Total Frontier	**625**	**1 130**

Note: Discovered resource totals are original recoverable in-place estimates and do not reflect production. (Totals have been rounded.)

Sources: National Energy Board (expressed as best current estimates: this is the quantity of oil or gas potentially recoverable using current technology and not constrained by economic viability, proved by drilling, testing or production plus that portion of contiguous recoverable resource that is interpreted to exist from geological or geophysical information.)

Offshore Nova Scotia resources courtesy of the Canada-Nova Scotia Offshore Petroleum Board (expressed as best current estimates).

Offshore Newfoundland resources courtesy of the Canada-Newfoundland Offshore Petroleum Board (expressed at 50% probability of occurrence).

Organization

Members of the National Energy Board

The membership of the Board at the end of December 1991 was:

Roland Priddle	Chairman
Jean-Guy Fredette	Vice-Chairman
R. Byron Horner, Q.C.	Member
William G. Stewart	Member
A. Boyd Gilmour	Member
Anita Côté-Verhaaf	Member
Céline Bélanger	Member
Roy Illing	Member
Kenneth W. Vollman	Temporary Member

Martha Musgrove resigned as a Member, effective 1 October 1991.

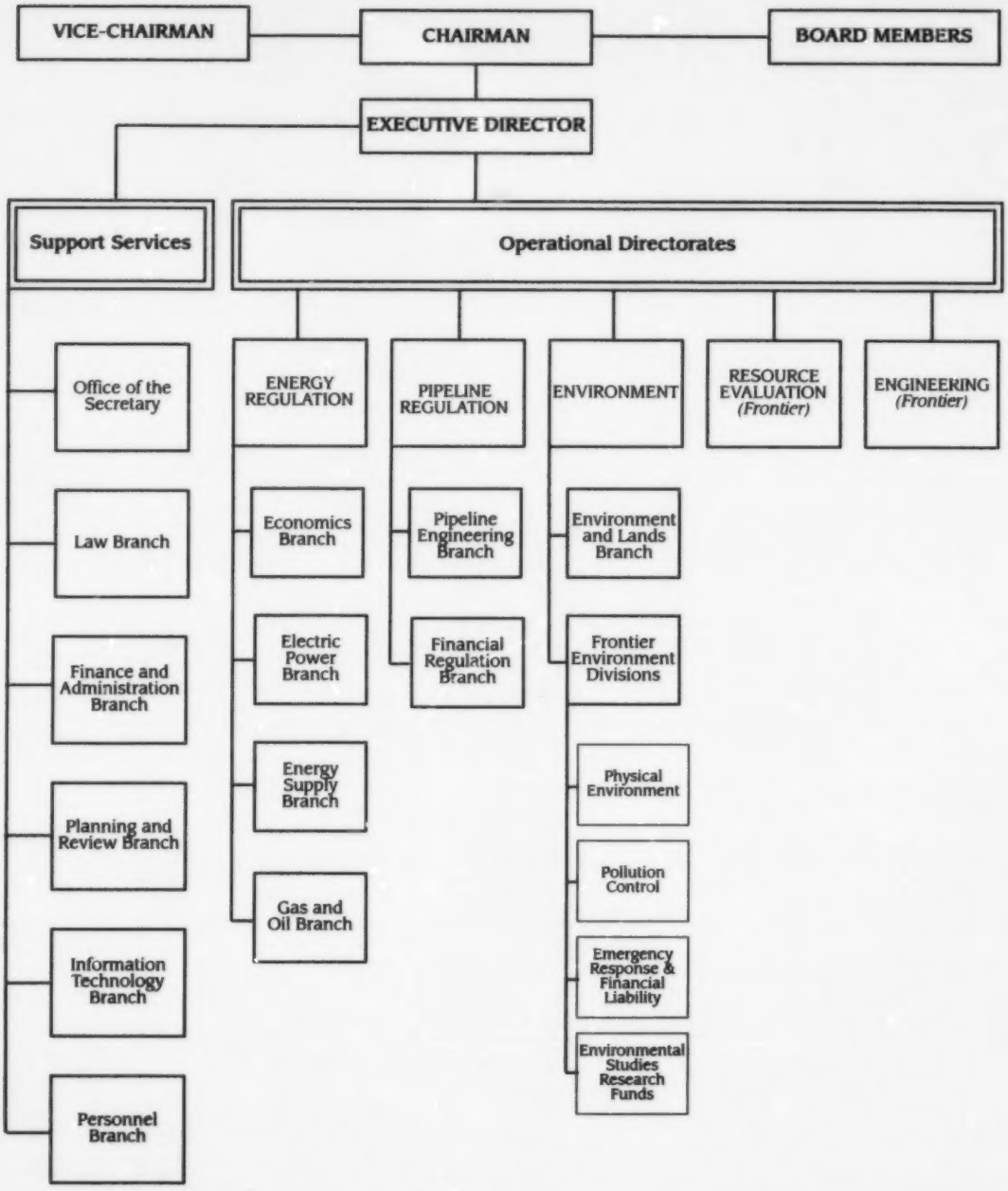
David B. Smith's term as a Temporary Member ended on 21 September 1991.

Staff

The Board's operating units are described below; the Board's senior staff are listed on the last page of this report.

The **EXECUTIVE DIRECTOR** is the Board's senior staff member and Chief Operating Officer. His responsibilities include the overall management of the Board, the acquisition and allocation of human and financial resources, the efficiency and effectiveness of Board activities and operations, and the provision of advice on such matters as the Chairman may deem appropriate.

- The **Office of the Secretary** is the Board's formal contact with the public. Thus, it receives all applications and submissions, coordinates their consideration by the Board and informs applicants and other interested parties of their outcome. It is similarly responsible for scheduling the Board's hearings and makes relevant administrative arrangements for its public hearings, wherever held. In addition, the Secretary's office is responsible for the operation of the Board's library; provides media and public relations services; and handles distribution of all the Board's publications. It administers the *Access to Information Act* and *Privacy Act* and coordinates translation services with the Secretary of State.



Please Note: The above figure accurately reflects the organizational structure of the National Energy Board for the greater part of 1991. However, early in 1992 a number of minor Branch and function realignments were undertaken, such that this figure should not be taken as representing the Board's organization after 31 December 1991.

Person-year allocation: 385 ***Budget : $39.4 million***

- The **Law Branch** provides legal advice to the Board on all matters relating to the Board's powers and responsibilities, acts as Counsel for the Board at public hearings, and represents the Board in proceedings before the Federal and Supreme Courts of Canada.

- The **Finance and Administration Branch** coordinates and administers the financial and administrative policies under which the Board operates. It provides advice and services relating to account processing; financial planning and budgeting; and property, material, records and mail management. It also provides accounting services for the Northern Pipeline Agency.

- The **Planning and Review Branch** is responsible for the Board's strategic and operational planning processes, program review and evaluation, internal audit program and management practices program.

- The **Information Technology Branch** is responsible for computer systems services, word processing support, data processing support and telephone services. This responsibility includes consultative services on computer operations, data management, program design and development, and an advisory service on the latest data processing techniques and applications. Branch responsibilities also include the integration of information processing systems and services for the Board.

- The **Personnel Branch** provides advice and services in the areas of staffing, human resources planning, training, employment equity, official languages, classification, staff relations, safety and health, pay and benefits, conflict of interest, employee assistance, merit awards and security.

The **ENERGY REGULATION DIRECTORATE** is responsible for the integration of all staff activities involving the regulation of energy exports and international power lines. This encompasses planning and coordinating all work affecting the regulation of international power lines and of exports of oil, gas, and electricity under *Part VI* of the *National Energy Board Act*, and coordinating the analysis of all matters related to energy demand and supply.

- The **Economics Branch** is responsible for providing advice to Board Members on the economic aspects of applications before the Board related to certification of facilities, licensing of gas and electricity exports and pipeline tolls and tariffs. In addition, the Branch provides advice to the Board, in collaboration with other branches, on general issues pertaining to energy regulation. The Branch is responsible for preparing detailed projections of energy demand in Canada; long-term outlooks for Canadian energy exports; and for preparing long-term projections of Canadian natural gas and world oil prices. These activities are performed largely in support of the Board's *Canadian Energy Supply and Demand and Natural Gas Market Assessment* reports.

- The **Electric Power Branch** advises on matters relating to electricity export authorizations, international power line certification, and regulatory surveillance. The Branch prepares supply and demand forecasts for electricity that are used in dealing with electrical and other applications, and in support of the Board's *Canadian Energy Supply and Demand* report, reviews the North American market for electricity, and provides advice on matters under federal jurisdiction that relate to the production, transportation, sale, and exchange of electricity.

- The **Energy Supply Branch** is responsible for advising on matters relating primarily to the supply of crude oil, natural gas and natural gas liquids. The Branch reviews gas supply submissions contained in applications and prepares both short-term and long-term projections of supplies of these energy commodities, based on its own studies and consultations with industry and other groups. The Branch also prepares estimates of established oil and gas reserves in Canada; compiles estimates of ultimate resource potentials and reserves additions rates; evaluates the supply costs and economics of resource projects; and investigates potential new energy supply sources. The Branch undertakes these activities in support of both the Board's regulatory and advisory responsibilities.

- The **Gas and Oil Branch** provides advice to the Board on oil and gas matters including evaluation of oil and gas markets and commercial transactions, transmission, processing and distribution of commodities. The Branch is responsible for export and import regulation, monitoring, and for matters related to traffic and discrimination in service for gas and oil pipelines. The Branch collects and disseminates data on exports and imports including volumes and prices, and also prepares and supplies data on the consumption and transportation of crude oil, petroleum products, gas products and natural gas, incorporating estimates of short-term domestic and export demand and pipeline throughput.

The **PIPELINE REGULATION DIRECTORATE** integrates all staff activities relating to the regulation of gas, oil, petroleum products pipelines. This encompasses the design, construction, operation and safety concerns specified under *Part III* of the *National Energy Board Act* and matters regarding traffic, tolls, and tariffs under *Part IV* of the *National Energy Board Act*.

- The **Pipeline Engineering Branch** advises on matters relating to pipeline certificates and orders issued under the *National Energy Board Act* and for the regulation of the safety of pipeline facilities under the Board's jurisdiction. The Branch is the Board's principal source of advice on technical matters with respect to the design, construction and operation of pipelines and coordinates the review of application by pipeline companies for facilities construction. Staff in this Branch also administer certain portions of the *Canada Labour Code* relating to pipeline worker safety.

- The **Financial Regulation Branch** has the primary responsibility for tolls and tariffs, financial regulatory advice and costs of transportation under specific areas of the *National Energy Board Act*. As such, its main function includes the provision of financial advice to the Board and to the hearing panel on all toll applications. It also audits the accounts of pipeline companies under the Board's jurisdiction and monitors the financial performance of pipelines on a regular basis to ensure that tolls are just and reasonable.

The **ENVIRONMENT DIRECTORATE** is responsible for all environmental concerns relating to the regulation of oil, gas, petroleum products, pipelines, energy exports, international powerlines and frontier oil and gas activities. These activities encompass environmental matters specified under *Parts III* and *VI* of the *National Energy Board Act* (the *"NEB Act"*), the relevant sections of the *Oil and Gas Production and Conservation Act ("OGPCA")* and the *Canadian Petroleum Resources Act ("CPRA")*. The Directorate consists of the Environment and Lands Branch *(NEB Act)*, and the Physical Environment, Pollution Control, Emergency Response Financial Liability, and *ESRF* Divisions (*OGPCA* and *CPRA* functions).

- The **Environment and Lands Branch** conducts environmental screenings of applications for facilities and energy export applications; provides advice on environmental matters at pipeline and electrical export hearings; carries out environmental inspections during the construction and operation of pipeline and power line facilities; provides advice on the protection of land-owner rights with respect to land acquisition; and provides advice on the technical requirements related to third party crossings.

- The **Frontier Environment Divisions** regulate oil and gas activities on Frontier Lands to ensure that the highest standards of environmental protection are maintained. This involves both assessment of the effects of the environment on the safety of personnel and on operations, as well as of the effect of those operations on the safety of the environment. For example, the interrelationship between oceanographic, meterological and ice conditions and the safety of personnel and operations is one area of study and assessment, while another is evaluation of the validity and effectiveness of contingency plans and compensation schemes for dealing with environmental impacts. The divisions also manage Environmental Studies Research Fund ("ESRF") and Program on Energy Research and Development ("PERD") researches designed to improve the knowledge base upon which Frontier Lands regulatory decisions and recommendations are made. The ESRF sponsors physical environment, biological environment, and social research studies. PERD research studies are primarily related to marine engineering in the context of the physical environment.

The **RESOURCE EVALUATION DIRECTORATE (Frontier)** evaluates geological and geophysical information acquired by industry on frontier lands regulated by the National Energy Board to assess discovered resources and potential. Exploration and development activities in areas managed by the Offshore Petroleum Boards are monitored to maintain a Canada-wide view of petroleum resources and regulatory procedures. The Branch also evaluates possible geological hazards in proposed drilling programs, is responsible for the regulation of geological and geophysical programs, and for the management of data submitted by industry. The Branch publishes the *Schedule of Wells* for frontier lands.

The **ENGINEERING DIRECTORATE (Frontier)** has the prime responsibility for ensuring that frontier oil and gas activities are conducted in a manner that ensures personnel safety and protection of the environment and maximizes resource conservation. These objectives are accomplished by establishing and enforcing regulations and standards related to drilling, production and conservation, diving, occupational safety, marine operations, floating and fixed offshore structures and pipeline design. Regulations are enforced through regular comprehensive inspections of the site of each activity. The Directorate also manages and fosters research projects funded by the Panel on Energy Research and Development and participates in committees to develop codes and standards to support these objectives. In addition the Directorate maintains and provides information to the industry from the drilling and production data bases.

Relocation of Head Office

The decision to move the National Energy Board's head office from Ottawa to Calgary was announced by the government in its 26 February budget speech. Spending authority necessary to facilitate the move and to support personnel in their decisions to move with the Board or remain in Ottawa was first obtained from the Treasury Board in April. Early contact with the Department of Public Works brought forward its assistance in the tendering process, culminating with the building selection in April and its offer to complete the building fit-up to enable the Board to begin taking possession in September. The Board began operations in Calgary on 3 September.

Approximately 40 per cent of the Board's employees opted to move to Calgary, which is an exceptional level of support for a relocating federal department. The Board expects that by the end of February 1992 all vacant staff positions will be filled. By year's end 1991 approximately 70 per cent of the employees who remained in Ottawa had found other employment. Costs for the move were estimated to amount to $19 million, approximately three-quarters of the amount initially budgeted.

Functions and Responsibilities

Responsibilities Under the National Energy Board Act

The Board has two principal responsibilities under the *National Energy Board Act*:

- to regulate specific matters concerning oil, gas and electricity in the public interest, and
- to advise the government on the development and use of energy resources.

The Board has the authority to hold inquiries into any aspects of energy matters under its jurisdiction and to issue reports for the use and information of government, Parliament, and the general public.

The regulatory functions of the Board are described below.

Export Licences, Orders and Electricity Permits

The Board issues long-term authorizations for the export of oil, natural gas, and electricity. Authorizations relating to oil and natural gas are the subject of public hearings, while those relating to electricity are normally the subject of permits not requiring public hearings. However, the Board may recommend to the Governor in Council that an electricity export proposal be designated for a licensing proceeding requiring a public hearing. In issuing export authorizations, the Board must satisfy itself that, among other things, the proposed export is in the Canadian public interest. The Board also issues orders for short-term exports of oil and natural gas subject to the restrictions contained in the *National Energy Board Part VI Regulations*. In addition, the Board authorizes licences and orders for imports of natural gas.

Regulation of Pipeline Traffic, Tolls, Tariffs, and Accounting Practices

The Board regulates the traffic, tolls and tariffs of pipeline companies under federal jurisdiction to ensure that the tolls are just and reasonable and that there is no unjust discrimination in tariff or service. This involves consideration of the capital structure of a pipeline company and its operating costs and of the necessity for a fair return on investment so that capital can be attracted as needed to maintain and to extend service. The Board audits the accounts of pipeline companies and monitors their financial performance.

Certificates of Public Convenience and Necessity for Pipelines and Permits or Certificates for Power Lines

The Board grants certificates to construct and operate interprovincial and international oil, gas and petroleum products pipelines. Before a certificate is issued, the Board is required to hold a public hearing to determine whether the proposed facilities are required by the present and future public convenience and necessity. The construction and operation of international power lines are now normally authorized by the Board without public hearings. However, the Governor in Council may, on the recommendation of the Board, order that an application for a power line be subject to a certificate proceeding requiring a public hearing.

Detailed Routing - Pipelines and Power Lines

Persons whose lands may be affected by the route of a pipeline or power line approved by the Board can present their views to the Board at a local public hearing. Their evidence is considered in the determination of the final detailed route of the line.

In the case of power lines, detailed routing matters are normally dealt with under provincial laws unless an applicant elects to have federal laws apply.

Pipelines and Power Line Orders

The Board can exempt minor pipeline facilities or minor additions to, or modifications of, existing pipeline systems. These approvals are restricted to pipelines not more than 40 kilometres long and to installations such as tanks, pumps, compressors, and meter stations. The Board may also authorize, without a public hearing, the construction and operation of international power lines not exceeding 50 kilovolts.

Pipeline Safety

The *National Energy Board Onshore Pipeline Regulations* provide for the safe design, construction, and operation of pipelines under the Board's jurisdiction. To ensure high standards of pipeline construction and operation, the Board carries out inspection programs and conducts investigations of pipeline system performance.

Pipeline Utility Crossings

The Board monitors the construction and excavation activities of contractors, pursuant to the *National Energy Board Pipeline Crossing Regulations, Part I* and *Part II* to ensure safety during construction of crossing of federally regulated pipelines.

Environmental Protection

The Board considers the environmental implications of any proposal to build and operate an oil or natural gas pipeline or international power line. Companies preparing an application to the Board are encouraged to anticipate and discuss with all levels of government, public interest groups, and affected landowners the environmental issues and concerns that the proposed project could create. Such early planning with respect to environmental matters produces a more complete application addressing the appropriate alternatives and taking into account the public's concerns.

To ensure the highest level of environmental protection, the Board welcomes interventions at hearings from local environmental and public interest groups, as well as concerned individuals. To encourage public participation, the Board often convenes the hearing in the area where construction impacts would occur.

Following the issuance of a certificate or order, the Board audits a company's construction activities and, later during the operation of the system, its routine maintenance and monitoring procedures. In this way, the Board can satisfy itself that the companies continue to protect the environment, and ensure public health and safety.

Socio-Economic Impact

As part of its facilities approval process, the Board considers local and regional social and economic concerns. The Board ensures that applicants take all reasonable steps to minimize the negative impact a project may product and to enhance project benefits accruing to local, regional and specific groups. Economic impact assessments include a review of proposed socio-economic action plans, post-certificate monitoring of the success or failure of the action plans, and an assessment of actual project impacts.

Responsibilities under the Energy Administration Act

The Board's responsibilities under the *Energy Administration Act* relate to the collection of oil export charges. Although the charges on crude oil and bulk petroleum product exports were reduced to zero in 1985, some activity continued in 1991 in the area of collection and write-off of outstanding assessments.

Responsibilities under the Northern Pipeline Act

The Board's statutory responsibilities regarding the Canadian portion of the **Alaska Natural Gas Transportation System** relate mainly to the regulation of tolls and tariffs, the approval of pipe specifications and financing arrangements, the granting of leave to open orders, and the regulation of the

operation of the line. The Board also provides to the **Northern Pipeline Agency** finance and personnel services as well as technical advice. Mr. K.W. Vollman, a Board Member, is the Designated Officer of the **Northern Pipeline Agency**.

Responsibilities under the Labour Canada Agreement

A Memorandum of Understanding has been entered into by the Board and **Labour Canada**, whereby certain Board inspectors have been appointed safety officers by the **Minister of Labour** and have assumed operational responsibilities for matters of occupational safety and health as covered in *Part II* of the *Canada Labour Code*. The agreement, which came into effect on 23 February 1987, includes all pipelines under the Board's jurisdiction but excludes certain areas such as head offices and regional offices of the pipeline companies; these will continue to be the responsibility of **Labour Canada** inspectors.

Responsibilities for Regulating Frontier Oil and Gas Activities

In April 1991, regulatory responsibilities of the Canada Oil and Gas Lands Administration (COGLA) for oil and gas exploration development in frontier lands were transferred to the Board. Until legislative amendments are passed, decision-making powers will continue to be exercised by the **Ministers** of **Energy, Mines and Resources** and **Indian Affairs and Northern Development** via the *Oil and Gas Production and Conservation Act* and the *Canada Petroleum Resources Act* pursuant to technical advice and assistance given by the Board and its staff.

Public Access and Participation

The Board is a court of record. With specific exceptions relating to the confidentiality of certain competitive pricing information, the Board's deliberations are conducted on the basis of information that is publicly filed and publicly available in the Board's library in Calgary. For major applications and inquiries, the Board holds public hearings at which applicants and interested persons have full rights of participation in the official language of their choice. The Board wants to ensure widespread awareness of these activities. It therefore requires that applicants publish notices of its hearings in newspapers so that interested parties will know about them in advance and can therefore raise concerns and seek information.

The Board's *Reasons for Decision* on applications are issued as public documents.

In addition, the Board issues a quarterly *Regulatory Agenda* on matters coming before the Board as well as information bulletins and news releases on a variety of matters pertaining to Board activities.

Implementation of Board Decisions

When the Board is prepared to grant a certificate for a pipeline, or to issue a licence for the export or import of natural gas or the long-term export of oil, it advises the Governor in Council through the **Minister of Energy, Mines and Resources**. If a certificate is approved by the Governor in Council, it is then issued by the Board. In the case of long term export or import applications, licences issued by the Board come into effect upon approval by the Governor in Council.

Permits issued by the Board without public hearings for electricity exports or a power line are not subject to Governor in Council approval. However, the Governor in Council may, up to 45 days following the issuance of the permit by the Board, issue an order revoking the permit and requiring that a proposed export or international power line be designated for a licensing or a certificating process involving a public hearing.

A decision of the Board to refuse an application is not subject to referral to the **Governor in Council**, except in the case of energy exports to the **United States** where certain provisions of the Free Trade Agreement would apply as a consequence of the refusal. The Board's decision on tolls and tariffs are made without reference to the **Governor in Council**, as are the majority of the Board's day-to-day decisions.

Reviews and Appeals of Board Decisions

The Board may review, rescind, or change any of its orders or decisions, or rehear any application before deciding on it. It may also change a previously issued certificate or licence, but no such change is effective until approved by the Governor in Council.

Parties may apply to the Board requesting that a decision be reviewed.

A decision may be appealed to the **Federal Court of Appeal** provided the appeal is based on a point of law or jurisdiction.

Awarding of Costs

Except in detailed route hearings, the Board does not have the power to award costs to participants in its proceedings.

In the case of detailed route hearings, the Board may establish the appropriate level of compensation to be paid to a landowner for costs associated with participation in the hearing.

Reasons for Decisions and Other Major Documents Issued in 1991

Reasons for Decisions

January 1991
The New Brunswick Electric Power Commission
(Exports of Electricity)
Hearing Orders: EW-1-90 / EW-2-90
In The Matter Of:

- Applications dated 15 February and 10 July 1990 by The New Brunswick Electric Power Commission for authorizations to export electricity under Part VI of the *National Energy Board Act* ("the *Act*").

Cat. No. NE 22-1/1991-1E
ISBN 0-662-18489-0

January 1991
Westcoast Energy Inc.
(Tolls)
Hearing Order: RH-1-90
In The Matters Of:

- an Application dated 27 June 1990 by Westcoast Energy Inc. for an order respecting tolls pursuant to Part VI of the *Act*; and
- National Energy Board Directions on Procedure in Order RH-1-90.

Cat. No. NE 22-1/1991-4E
ISBN 0-662-18622-2

February 1991
Interprovincial Pipe Line Company, a division of Interhome Energy Inc.
(Facilities and Tolls)
Hearing Orders: GHW-5-90 and RH-3-90
In The Matters Of:

- an Application dated 30 April 1990 by Interprovincial Pipe Line Company, a division of Interhome Energy Inc. for an order exempting certain proposed additional pipeline facilities from provisions of certain sections of the *Act* pursuant to section 58 thereof; and for an order pursuant to section 59 of the *Act* respecting the methodology of toll calculation for the proposed facilities; and
- an Application dated 22 May 1990 by the Prospective Shippers pursuant to sub-sections 58(3) and 71(1) of the *Act* for an order granting unapportioned access to the proposed facilities; and
- National Energy Board Directions on Procedure GHW-5-90 and RH-3-90, as amended.

Cat. No. NE 22-1/1991-5E
ISBN 0-662-18710-5

February 1991
Trans Québec & Maritimes Pipeline Inc.
(Tolls)
Hearing Order: RH-2-90
In The Matter Of:

- an Application by Trans Québec & Maritimes Pipeline Inc. for certain orders respecting tolls under Part IV of the *Act*.

Cat. No. NE 22-1/1991-2E
ISBN 0-662-18515-3

April 1991
Ontario Hydro
(Exports of Electricity)
Hearing Order: EW-3-90
In The Matter Of:

- an Application by Ontario Hydro for authorizations to export electricity under Part VI of the *Act*.

Cat. No. NE 22-1/1991-6E
ISBN 0-662-18871-3

April 1991
TransCanada PipeLines Limited
(Volume 3: Facilities, Gas Exports and Section 71 Applications)
Hearing Order: GH-5-89
In The Matters Of:

- an Application by TransCanada PipeLines Limited for a Certificate under Part III of the *Act* for certain proposed additional facilities for 1991 and 1992; and
- various associated applications for licences for the export of natural gas pursuant to Part VI of the *Act*; and
- applications made by various parties for orders pursuant to section 71 of the *Act*;
- issues relating to toll methodology pursuant to Part IV of the *Act* and relating to economic feasibility matters.

Cat. No. NE 22-1/1991-3E
ISBN 0-662-18516-1

April 1991
TransCanada PipeLines Limited
(Facilities)
Hearing Order: GH-4-90
In The Matters Of:

- a review, under Part I of the *Act*, of the Board's decision of 20 November 1989, to deny the application of TransCanada Pipelines Canada Limited ("TransCanada") dated 29 December 1988, as amended, for a certificate in respect of certain proposed facilities known as the Gananoque Extension; and

- an Application by TransCanada dated 22 June 1990 entitled "Gananoque Extension Facilities Review Application"; and
- National Energy Board Hearing Order GH-4-90, as amended.

Cat. No. NE 22-1/1991-7E
ISBN 0-662-18903-5

May 1991
Dartmouth Power Associates Limited Partnership
(Gas Exports)
Hearing Order: GH-9-90
In The Matter Of:

- an Application by Dartmouth Power Associates Limited Partnership, by its agent Brymore Energy Ltd for a Licence under Part VI of the *Act* to export natural gas.

Cat. No. NE 22-1/1991-9E
ISBN 0-662-18937-X

May 1991
L&J Energy Systems, Inc.
(Gas Export)
Hearing Order: GH-2-91
In The Matters Of:

- an Application dated 26 March 1990 by L&J Energy Systems, Inc. pursuant to Part VI of the *Act* for a licence authorizing the export of natural gas;
- National Energy Board Reasons for Decision GH-3-90; and
- an Application by L&J Energy Systems, Inc. for a review of gas export Licence GL-148

Cat. No. NE 22-1/1991-8E
ISBN 0-662-18907-8

June 1991
Westcoast Energy Inc.
(Facilities)
Hearing Order: GH-6-90
In The Matters Of:

- an Application dated 6 July 1990, as amended 6 December 1990, by Westcoast Energy Inc. for a Certificate of Public Convenience and Necessity pursuant to Part III of the *Act*, for the Adsett Pipeline Project; and
- National Energy Board Hearing Order GH-6-90.

Cat. No. NE 22-1/1991-10E
ISBN 0-662-18968-X

July 1991

TransCanada PipeLines Limited

(Facilities)

Hearing Order: GH-1-91

In The Matters Of:

- an Application by TransCanada PipeLines Limited pursuant to section 58 of the *Act* for the construction of a pipeline and associated facilities (the "Blackhorse Extension") to provide new export service at Chippawa, Ontario; and
- National Energy Board Hearing Order GH-1-91.

Cat. No. NE 22-1/1991-11E
ISBN 0-662-19006-8

September 1991

TransCanada PipeLines Limited

(Tolls)

Hearing Order: RH-1-91

In The Matters Of:

- an Application by TransCanada PipeLines Limited for certain orders respecting its tolls pursuant to Part IV of the *Act*; and
- National Energy Board Hearing Order RH-1-91.

Cat. No. NE 22-1/1991-12E
ISBN 0-662-19242-7

Other Major Documents

January 1991
National Energy Board 1991-92 Estimates: Part III Expenditure Plan
Cat. No. BT31-2/1992-III-14
ISBN 0-660-56331-2

February 1991
Lexicon English - French
(A National Energy Board Guide for Translators and Editors)

March 1991
Excavation and Construction Near Pipelines (revised)
Cat. No. NE 23-31/1990E
ISBN 0-662-17918-8

March 1991
National Energy Board 1990 Annual Report
Cat. No. NE 1-1990E
ISBN 0-662-18691-5

April 1991
Exports of Petroleum Products 1990
(National Energy Board Staff Report)
Cat. No. NE 1-3/1990E
ISBN 0-662-18928-0

April 1991
The Sarnia - Montreal Pipeline
(A Review and Report by the National Energy Board)
Cat. No. NE 23-32/1991E
ISBN 0-662-18868-3

June 1991
Canadian Energy Supply And Demand 1990-2010 Summary
(National Energy Board Report)
Cat. No. NE 23-15/1991E
ISBN 0-662-18957-4

June 1991
Canadian Energy Supply And Demand 1990-2010
(National Energy Board Report)
Cat. No. NE 23-15/1991E
ISBN 0-662-18956-6

September 1991
National Energy Board - An Introduction
Cat. No. NE 23-29/1991-E
ISBN 0-662-17996-X

Copies of the Board's Reasons for Decisions and other reports are available on request from:

Regulatory Support Office
National Energy Board
311 - 6th. Avenue S.W.
Calgary, Alberta
T2P 3H2
(403) 292-4800
Fax: (403) 292-5503

Appendices

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Companies Under National Energy Board Jurisdiction

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A3 Group 2 Gas Pipelines

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A6 Electric Power Licencees, Certificate and Permit Holders

Appendix B

Oil

B1 Certificates Issued During 1991 Approving New Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

B2 Orders Issued During 1991 Approving New Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

B3 Orders Issued During 1991 Approving Modifications and Additions to Existing Oil Pipeline Facilities

Appendix C

Gas

C1 Certificates Issued During 1991 Approving New Gas Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

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E1 Financial Information - Group 1 Oil Pipeline Companies

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Appendix A

Companies under National Energy Board Jurisdiction

The following is a list of pipeline companies[a] which own and/or operate interprovincial or international pipelines under the Board's jurisdiction, companies that have been granted licences to export natural gas, and electric utilities that have been granted electricity export licences by the Board. References to the following companies in this report use the abbreviations indicated in brackets.

Appendix A1

Group 1 Gas Pipelines

Alberta Natural Gas Company Ltd. (Alberta Natural Gas)
Foothills Pipe Lines Ltd. (Foothills)
TransCanada PipeLines Limited (TransCanada)
Trans Québec & Maritimes Pipeline Inc. (TQM)
Westcoast Energy Inc (Westcoast)

Appendix A2

Group 1 Oil and Products Pipelines

Cochin Pipe Lines Ltd. (Cochin)
Interprovincial Pipe Line Inc. (Interprovincial)
(Name changed during 1991 from 'Interprovincial Pipe Line Company, a division of Interhome Energy Inc.')
Interprovincial Pipe Line (NW) Ltd. (Interprovincial (NW))
Trans Mountain Pipe Line Company Ltd. (Trans Mountain)
Trans-Northern Pipelines Inc. (Trans-Northern)

Appendix A3

Group 2 Gas Pipelines

Amerada Hess Canada Ltd. (Amerada)
Amoco Canada Petroleum Company Ltd. (Amoco Petroleum) *Inactive*
Amoco Canada Resources Limited (Amoco Canada) *Inactive*
Bonanza Oil and Gas Ltd. (Bonanza)
Bow Valley Industries Ltd. (Bow Valley)
BP Resources Canada Limited (BP)
Canadian Hunter Exploration Ltd. (Canadian Hunter)

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[a] The pipeline companies have been divided into two groups, Group 1 consists of the ten major pipeline companies which are audited by the Board on a regular basis and whose operating results are continuously monitored by the Board. The 43 companies under the Board's jurisdiction that are not included in Group 1 have been designated as Group 2 companies.

Group 2 Gas Pipelines *(continued)*

Canadian-Montana Pipe Line Company (Canadian-Montana)
Centra Transmission Holdings Inc. (Centra)
Champion Pipe Line Corporation Limited (Champion)
Consumers' Gas (Canada) Limited (Consumer's Gas)
Genesis Pipeline Canada Ltd. (Genesis)
Many Island Pipe Lines (Canada) Limited (Many Islands)
Mid-Continent Pipelines Limited (Mid-Continent)
Minell Pipeline Ltd. (Minell)
Murphy Oil Company Ltd. (Murphy Oil) *Inactive*
Niagara Gas Transmission Limited (Niagara Gas)
Novacorp International Pipelines Ltd. (Novacorp)
Peace River Transmission Company Limited (Peace River)
Poco Petroleum Ltd. (Poco)
SCL Quebec Pipeline Inc. (SCL)
St. Clair Pipelines Ltd. (St. Clair Pipelines)
Union Gas Limited (Union Gas)
167496 Canada Ltd. (167496 Canada)

Appendix A4
Group 2 Oil and Products Pipelines

Aurora Pipe Line Company (Aurora)
Dome Kerrobert Pipeline Ltd. and Pan Canadian Kerrobert Pipeline Ltd. (Dome Kerrobert and Pan Canadian)
Dome NGL Pipeline Ltd. (Dome NGL)
Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd. (Dome NGL and Amoco)
Esso Resources Canada Limited (Esso)
Husky Border Pipelines Ltd. (Husky)
Manito Pipelines Ltd. (Manito)
Montreal Pipe Line Limited (Montreal Pipe Line)
Mont Resources Limited (Mont Resources)
Murphy Oil Company Ltd. (Murphy Oil)
Northwest Transmission Company Limited (Northwest Transmission)
Petroleum Transmission Company (Petroleum Transmission)
Pouce Coupé Pipe Line Ltd. (Pouce Coupé)
Shell Canada Products Limited (Shell)
Sun Pipe Line Company (Sun)
Wascana Pipe Line Ltd. (Wascana)
Westspur Pipe Line Company (1985) Inc. (Westspur)
Windsor Storage Facility Joint Venture (Windsor Storage)
Yukon Pipelines Limited (Yukon Pipelines)

Appendix A5

Gas Export Licence Holders

Alberta and Southern Gas Co. Ltd. (Alberta and Southern)
Alberta Northeast Gas Ltd. & AEC Oil and Gas Company (ANE & AEC) [b]
Alberta Northeast Gas Ltd. & ATCOR Ltd. (ANE & ATCOR) [b]
Alberta Northeast Gas Ltd. & ProGas Limited (ANE & ProGas) [b]
Alberta Northeast Gas Ltd. & TransCanada PipeLines Limited (ANE & TransCanada) [b]
Amoco Canada Petroleum Company Ltd. (Amoco)
Amoco Canada Resources Limited (Amoco Resources)
BC Gas Inc. (BC Gas) [c]
Brymore Energy Ltd. (Brymore)
Canadian Hunter Exploration Ltd. (Canadian Hunter)
Canadian Occidental Petroleum Limited (Canadian Occidental)
Canadian-Montana Pipe Line Company (Canadian Montana)
CanStates Gas Marketing and Transco Energy Marketing Company (CanStates/TEMCO) [b]
Canterra Energy Ltd. (Canterra)
Dartmouth Power Associates, Limited Partnership (Dartmouth Power)
Direct Energy Marketing Limited (Direct Energy)
Encogen Four Partners, Limited Partnership (Encogen)
Esso Resources Canada Limited (Esso)
FSC Resource Limited (FSC)
Fulton Cogeneration Associates (Fulton)
Gulf Canada Resources Limited (Gulf)
Husky Oil Operations Ltd. (Husky)
ICG Transmission Holdings Ltd. (ICG Transmission)
ICG Utilities [Ontario] Ltd. (ICG [Ontario]) [c]
Indeck Gas Supply Corporation (Indeck)
Kamine/Besicorp Carthage, Limited Partnership (K/B Carthage)
Kamine/Besicorp South Glens Falls, Limited Partnership (K/B South Glenns)
Kanngaz Producers Ltd. (Kanngaz)
L & J Energy Systems, Inc. (L & J Energy)
Many Islands Natural Gas [Canada] Limited (Many Islands)
Mobil Oil Canada Ltd. (Mobil)
New England Power Company (New England)
Niagara Gas Transmission Limited (Niagara Gas)
Norcen Energy Resources Limited (Norcen)
North Canadian Oils Limited (North Canadian)
Pan-Alberta Gas Ltd. (Pan-Alberta)
Poco Petroleums Ltd. (Poco)
ProGas Limited (ProGas)
Ramarro Resources Inc. (Ramarro)
Selkirk Cogen Partners, Limited Partnership (Selkirk)

(b) Joint licence holders
(c) Export for re-import

Gas Export Licence Holders *(continued)*

Shell Canada Limited (Shell Canada)
TransCanada PipeLines Limited (TransCanada)
Union Gas Limited (Union Gas)
Unigas Corporation (Unigas)
Vector Energy Inc. (Vector)
Westcoast Energy Inc. (Westcoast)
Western Gas Marketing Limited (Western Gas Marketing)

Appendix A6

Electric Power Licencees, Certificate and Permit Holders

Boise Cascade Canada (Boise Cascade)
British Columbia Hydro and Power Authority (BC Hydro)
Canadian Niagara Power Company Limited (Canadian Niagara)
The Canadian Transit Company (Canadian Transit)
Cedar Rapids Transmission Company Limited (Cedar Rapids)
Cominco Ltd. (Cominco)
Cornwall Electric (Cornwall Electric) [d]
The Detroit and Windsor Subway Company (Detroit and Windsor)
Fraser Inc. (Fraser)
Hydro-Québec (Hydro-Québec)
Maine and New Brunswick Electrical Power Company Limited
(Maine and New Brunswick)
The Manitoba Hydro-Electric Board (Manitoba Hydro)
The New Brunswick Electric Power Commission (New Brunswick Power)
Ontario Hydro (Ontario Hydro)
Saskatchewan Power Corporation (Sask Power)
West Kootenay Power and Light Company Limited (West Kootenay)

(d) All licencees except Cornwall Electric export over their own facilities for which Board certificates have been issued. Cornwall Electric exports its power over the facilities of Cedar Rapids.

Appendix B

Oil

B1. Certificates Issued During 1991 Approving New Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

No Certificates were issued in 1991.

B2. Orders Issued During 1991 Approving New Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order No.	Issued	Facilities	Estimated Cost ($)
Husky Border Pipelines Ltd.	X0-6-91	91-05-23	Four pipelines, 10.4-km each, and a pump/meter station, Lloydminster, Alberta-Saskatchewan	7 579 500

B3. Orders Issued During 1991 Approving Modifications and Additions to Existing Oil Pipeline Facilities

Applicant	Order No.	Issued	Facilities	Estimated Cost ($)
Cochin Pipe Lines Ltd.	X0-16-91	91-10-24	3 200-m, 324-mm pipeline replacement and relocation of a pump station at Alameda Dam Project, Saskatchewan	
	X0-21-91	91-11-22	1 040-m, pipeline replacement and sectionalizing valve, Fort Saskatchewan, Alberta	472 000
Dome Kerrobert Pipeline Ltd. and PanCanadian Kerrobert Pipeline Ltd.	X0-17-91	91-10-22	New scraper traps and modifications of existing scraper traps, Alberta/Saskatchewan	75 000
Dome NGL Pipeline Ltd.	X0-19-91	91-11-7	Piping modifications, Windsor Pump Station, Ontario	120 000
Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd.	X0-10-91	91-06-27	Pipeline tie-in, Ontario	10 000
Interprovincial Pipe Line Company, a division of Interhome Energy Inc.	X0-1-91	91-02-15	Natural gas liquids storage and injection facilities, Edmonton Terminal	18 044 000

B3. Orders Issued During 1991 Approving Modifications and Additions to Existing Oil Pipeline Facilities *(Continued)*

Applicant	Order No.	Issued	Facilities	Estimated Cost ($)
Interprovincial Pipe Line Company, a division of Interhome Energy Inc.	X0-2-91	91-03-25	Valve actuator and gear box, Regina Terminal	20 000 000
	X0-3-91	91-03-28	Supplementary Projects	2 305 100
	X0-4-91	91-04-18	Supplementary Project, Hardisty	13 700 000
	X0-7-91	91-04-18	Metering manifold and fillet weld program	9 336 000
	X0-14-91	91-11-14	Miscellaneous Projects	1 797 900
	X0-18-91	91-11-14	Supplementary Projects	1 019 100
Manito Pipelines Ltd.	X0-20-91	91-11-07	Two additional pumps and two additional meters, Saskatchewan	585 000
Petroleum Transmission Company	X0-5-91	91-04-18	Pipeline upgrading and remote valve operators, Saskatchewan-Manitoba	385 000
Trans Mountain Pipe Line Company Ltd.	X0-8-91	91-05-02	Mainline repair, and Repower Load centre at Westridge, British Columbia	128 900
	X0-9-91	91-06-27	Relocation Section of Pipeline, British Columbia	790 000
	X0-11-91	91-06-27	465-m, 610-mm pipeline relocation, British Columbia	1 222 000
	X0-15-91	91-08-29	Pipe racks, Edmonton Terminal, Alberta	700 000
	X0-22-91	91-12-20	Miscellaneous Projects for 1992	11 400 000
Trans-Northern Pipelines Inc.	X0-13-91	91-08-01	Supplementary Projects	5 077 000
Westspur Pipe Line Company (1985) Inc.	X0-12-91	91-07-25	2 700-m, 406.4-mm crude oil pipeline replacement, 2 700-m, 323.9-mm natural gas liquids pipeline replacement and three block valves at Alameda Dam Project, Saskatchewan	

Appendix C

Gas

C1. Certificates Issued During 1991 Approving New Gas Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

Applicant	Certificate No.	Issued	Facilities	Estimated Cost ($)
TransCanada PipeLines Limited	GC-80	91-05-17	1 190-km loops and pipeline, 17 compressor units and a meter station Manitoba, Saskatchewan and Ontario	18 351 000
Westcoast Energy Inc.	GC-81	91-11-21	48-km, 219.1-mm Adsett Pipeline, British Columbia	8 300 000

C2. Orders Issued During 1991 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

Applicant	Order No.	Issued	Facilities	Estimated Cost ($)
Amerada Hess Canada Ltd.	XG-9-91	91-02-18	22.5-km, 273-mm Goodlow Pipeline, British Columbia-Alberta	3 100 000
Bow Valley Industries Ltd.	XG-3-91	91-01-24	5-km, 88.9-mm pipeline, Alberta-Saskatchewan	177 000
Canadian Hunter Exploration Ltd.	XG-26-91	91-06-13	3.75-km, 114.3-mm pipeline, British Columbia-Alberta	619 000
Many Islands Pipe Lines (Canada) Limited	XG-2-91	91-01-10	30-m, 114.3-mm Renaissance Pipeline, Alberta-Saskatchewan	6 100
Murphy Oil Company Ltd.	XG-1-91	91-01-02	12-km, 119.3-mm pipeline, Alberta-Saskatchewan	370 000
TransCanada PipeLines Limited	XG-8-91	91-02-06	Exemptions and requirements respecting crossing of Lake Wahtopanah, Manitoba, by 1219-mm loop referred to in Certificate GC-78, issued 90-11-28	
	XG-11-91	91-03-15	26.1 MW compressor unit at Station 116, North Bay, Ontario	24 500 000
	XG-14-91	91-04-11	Sydenham Meter Station, Ontario	419 000
	XG-15-91	91-05-16	1.2-km, 914-mm test loop, Western Gas Research Facility, Saskatchewan	630 000
	XG-22-91	91-05-16	Nipigon Power Meter Station, Ontario	303 000
	XG-39-91	91-12-20	Deep River Sales Tap, Ontario	113 000

C2. Orders Issued During 1991 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length *(Continued)*

Applicant	Order No.	Issued	Facilities	Estimated Cost ($)
Trans Québec & Maritimes Pipeline Inc.	XGM-35-91	91-09-12	Deschambault Meter Station, Québec	510 000
Westcoast Energy Inc.	XG-5-91	91-01-15	33.45-km, 406.4-mm Klua Pipeline, British Columbia	11 000 000
	XG-12-91	91-03-14	Facilities purchased from Petro-Canada Inc., to be added to Taylor Processing Plant, British Columbia	20 350 000
	XG-13-91	91-03-28	39.26-km, 914-mm Fort Nelson Mainline looping, British Columbia	41 700 000
	XG-29-91	91-07-04	37.5-km, 914-mm Mainline looping at three locations, British Columbia	52 500 000

C3. Orders Issued During 1991 Approving Modifications and Additions to Existing Gas Pipeline Facilities

Applicant	Order No.	Issued	Facilities	Estimated Cost ($)
Alberta Natural Gas Company Ltd	XG-7-91	91-01-31	Miscellaneous Projects	18 597 100
Champion Pipe Line Corporation Limited	XG-34-91	91-08-06	Total of 300-m, 219.1-mm pipeline lowerings at three locations, Québec	60 000
Consumers' Gas (Canada) Ltd.	XG-17-91	91-07-02	51-mm tap into 610-mm pipeline, Brampton, Ontario	500
	XG-32-91	91-08-01	28-m, 610-mm pipeline lowering, Brampton, Ontario	210 000
Foothills Pipe Lines Ltd.	XG-4-91	91-01-14	Scraper Trap Modifications	101 503
	XG-10-91	91-03-01	Miscellaneous Projects	3 888 500
	XG-16-91	91-04-11	Supervisory Control and Data Acquisition System (SCADA) upgrade, Alberta and Saskatchewan	1 540 000

C3. Orders Issued During 1991 Approving Modifications and Additions to Existing Gas Pipeline Facilities *(Continued)*

Applicant	Order No.	Issued	Facilities	Estimated Cost ($)
Foothills Pipe Lines (Alta.) Ltd.	XG-24-91	91-06-06	Partial Third Train Expansion at Empress, Alberta	7 000 000
Many Islands Pipelines (Canada) Limited	XG-31-91	91-09-23	5-m, 406.4-mm bypass piping at Shaunavon Compressor Station, Saskatchewan	12 000
	XG-36-91	91-09-12	Tie-in to Esther-Smiley Pipeline, Saskatchewan	10 500
	XG-40-91	91-11-20	Tie-in to Esther-Smiley Pipeline, Saskatchewan	10 500
TransCanada PipeLines Limited	XG-6-91	91-02-14	Miscellaneous Projects	19 104 000
	XG-20-91	91-05-16	Miscellaneous Projects	2 872 000
	XG-21-91	91-05-01	Land exemptions for looping referred to in GC-80, issued 91-05-17	
	XG-23-91	91-06-06	Portable Compressor Unit, Station 1401, Ontario	4 410 000
	XG-27-91	91-06-13	Compressor Station Modifications and Changes	2 381 000
	XG-28-91	91-06-27	77-m, 508-mm pipeline replacement at highway crossing, Ontario	187 000
	XG-30-91	91-07-31	Station manifolding, standby plant and spares, Saskatchewan and Ontario	62 605 000
	XG-37-91	91-09-12	Miscellaneous Projects	809 000
	XG-38-91	91-10-03	Two pipeline replacement portions and four valve removals, Québec	247 000
Trans Québec & Maritimes Pipeline Inc.	XG-19-91	91-05-16	Delivery Point at Yamachiche, Québec	18 500
	XG-25-91	91-06-06	Delivery Point at Oka, Québec	13 900
Westcoast Energy Inc.	XG-18-91	91-05-02	Miscellaneous Projects	6 160 000
	M0-10-91	91-05-02	Pipeline Diversion, 1.6-km, 762-mm, Fort St. John Mainline, British Columbia	1 930 000
	XG-33-91	91-08-29	Miscellaneous Projects	4 403 000

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order From	To	Maximum Volumes Daily (10^3m^3)	Annual (10^6m^3)	Term (10^6m^3)
Alberta and Southern Gas Co. Ltd.	L-99	Kingsgate, BC.	1986-12-18	1987-10-31	31 897.2	9 340.9	77 626.5
			1987-11-01	1994-10-31	31 897.2	10 580.4	
	GL-111	Kingsgate, BC.	1994-11-01	2005-10-31	31 900.0	10 580.5	116 385.0
Alberta Northeast Gas Ltd. and AEC Oil and Gas Company	GL-105	Iroquois, Ont.	1988-11-01	2003-10-31	495.7	180.9	2 714.0
Alberta Northeast Gas Ltd. and ATCOR Ltd.	GL-104	Iroquois, Ont.	1988-11-01	2003-10-31	991.5	361.9	5 428.0
Alberta Northeast Gas Ltd. and ProGas Limited	GL-103	Iroquois, Ont.	1988-11-01	2003-10-31	1 869.6	682.4	10 236.0
Alberta Northeast Gas Ltd. and TransCanada PipeLines Limited	GL-102	Iroquois, Ont.	1988-11-01	2003-10-31	7 506.9	2 740.0	42 646.0
		Niagara Falls, Ont.	1988-11-01	2003-10-31	283.3	103.4	
Amoco Canada Petroleum Company Ltd.	GL-112	Huntingdon, BC.	1989-07-24	1989-10-31	704.0	70.4	3 856.0
			1989-11-01	2004-10-31	704.0	257.0	
Amoco Canada Resources Limited	GL-108	Emerson, Man.	1989-03-16	1989-10-31	422.5	96.8	1 504.0
			1989-11-01	2001-10-31	422.5	154.0	
Amoco Canada Resources Limited and Consolidated Edison Company	GL-127	Niagara Falls, Ont.	1990-07-27	1990-10-31	873.0	84.7	4 728.0
			1990-11-01	2004-10-31	873.0	319.0	4 778.0
BC Gas Inc.	GL-123(a)	Huntingdon, BC.	1989-11-09	1992-04-30	1 703.0	61.3	184.0
Canadian Hunter Marketing Ltd.	GL-107	Niagara Falls & Iroquois, Ont.	1990-11-01	2010-10-31	845.0	254.0	3 381.0
Canadian-Montana Pipe Line Company	GL-25	Aden/Cardston, Alta, Emerson, Man. & Niagara Falls, Ont.	1968-11-01	1969-10-31	339.9	103.4	4 890.8
			1969-11-01	1991-10-31	679.9	206.8	
			1991-11-01	1993-10-31	390.9	119.0	
	GL-72	Aden, Alta.	1988-01-01	1988-10-31	1 133.1	236.1	1 085.7
			1988-11-01	1990-10-31	1 416.4	283.3	
			1990-11-01	1991-10-31	1 416.4	188.7	
			1991-11-01	1992-10-31	1 416.4	94.3	
	GO-3-79	Reagan Field, Alta.	1979-05-01	1993-12-31	30.0	10.3	105.0
Canadian Occidental Petroleum Ltd.	GL-150	Niagara Falls, Ont.	1991-11-01	2006-10-31	433.4	158.2	2 373.0

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991 *(Continued)*

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order From	To	Maximum Volumes Daily (10^3m^3)	Annual (10^6m^3)	Term (10^6m^3)
Canstates Gas Marketing and Transco Energy Marketing Company	GL-137	Niagara Falls, Ont.	1990-11-08	1991-10-31	1 371.1	449.7	5 593.8
			1991-11-01	2000-10-31	1 371.1	459.3	
			2000-11-01	2002-10-31	1 371.1	500.4	
Canterra Energy Ltd.	GL-113	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 099.1
			1989-11-01	2003-10-31	424.9	155.1	
	GL-114	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 246.4
Centra Gas Ontario Ltd.	GL-130(b)	Sprague, Man.	1990-07-27	1990-10-31	640.0	62.1	3 150.0
Centra Transmission Holdings Ltd.	GL-28	Sprague, Man.	1970-11-01	1995-10-31	80.3	9.5	229.0
	GL-29	Fort Frances, Ont.	1970-11-01	1995-10-31	915.6	218.5	5 462.2
	GL-30(b)	Sprague, Man.	1970-11-01	1995-10-31	1 321.8	344.0	8 498.1
Darmouth Power Associates Limited partnership	GL-164	Iroquois, Ont.	1992-11-01	2007-10-31	400.9	146.4	2 196.0
Direct Energy Marketing Limited	GL-132	Philipsburg, Que.	1990-07-27	1990-10-31	171.0	16.6	936.2
			1990-11-01	2005-10-31	171.0	62.4	
Encogen Four Partners	GL-152	Chippawa, Ont.	Date of 1st deliveries for 15-year term		424.9	155.1	2 326.6
Esso Resources Canada Ltd.	GL-151	Iroquois, Ont.	1991-11-01	2006-10-31	991.5	362.0	5 432.0
Esso Resources Canada Ltd. and Transco Energy Marketing Company	GL-136	Niagara Falls, Ont.	1990-11-08	1991-10-31	2 125.0	76.1	9 307.5
			1991-11-01	2002-10-31	2 125.0	775.6	
FSC Resources Ltd.	GL-138	Napierville, Que.	1991-03-01	1991-10-31	1 530.0	374.9	8 376.8
			1991-11-01	2005-10-31	1 530.0	558.5	
	GL-153	Niagara Falls, Ont.	1991-11-01	2006-10-31	453.0	165.3	2 480.2
Fulton Cogeneration Ass.	GL-154	Chippawa, Ont.	1991-11-01	2001-10-31	326.2	119.0	1 424.0
			2001-11-01	2005-10-31	160.0	58.4	
Husky Oil Operations Ltd.	GL-144	Cornwall, Ont.	1992-08-01	2007-11-01	566.6	206.8	3 154.0
Indeck Gas Supply Corporation	GL-133	Niagara Falls, Ont.	1990-07-27	1990-10-31	810.0	78.6	3 500.0
			1990-11-01	2005-10-31	810.0	293.0	
	GL-155	Chippawa, Ont.	Date of 1st deliveries for 15-year term		459.0	168.0	2 439.0
	GL-156	Chippawa, Ont.	Date of 1st deliveries for 15-year term		210.0	73.0	852.0
Kamine / Besicorp Carthage L.P.	GL-158	Chippawa, Ont.	1991-11-01	2006-10-31	402.3	139.5	2 093.7

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991 *(Continued)*

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order From	To	Maximum Volumes Daily (10^3m^3)	Annual (10^6m^3)	Term (10^6m^3)
Kamine/ Besicorp South Glens L.P.	GI-159	Emerson, Man.	1991-11-01	2006-10-31	402.3	139.5	2 093.7
KannGaz Producers Ltd.	GL-77	Niagara Falls, Ont.	1987-11-01	1996-10-31	3 540.0	1 292.1	13 567.0
			1996-11-01	1997-10-31	2 655.0	969.1	
			1997-11-01	1998-10-31	1 770.0	646.0	
			1998-11-01	1999-10-31	885.0	323.0	
L&J Energy Systems Inc.	GL-148	Iroquois, Ont.	Date of 1st deliveries for 12-year term		329.6	121.3	1 455.6
Many Islands Natural Gas (Canada) Limited	GL-44(c)	Emerson, Man.	1972-03-15	1992-10-31	4 249.2	1 274.8	18 951.3
Mobil Oil Canada	GL-145	Huntingdon, B.C.	1991-01-24	2000-10-31	327.5	119.5	1 195.5
	GL-146	Huntingdon, B.C.	1991-01-24	1992-10-31	136.5	49.8	1 145.6
			1992-11-01	1995-10-31	272.9	99.6	
			1995-11-01	2000-10-31	409.4	149.4	
	GL-147	Huntingdon, B.C.	1991-01-24	1992-10-31	272.9	99.6	1 842.9
			1992-11-01	2003-10-31	409.4	149.4	
New England Power Co.	GL-160	Iroquois, Ont.	1991-11-01	2006-11-01	1 700.0	621.0	9 308.0
Niagara Gas Transmission Limited	GL-78	Cornwall, Ont.	1987-11-01	1990-10-31	1 200.0	275.0	1 099.7
			1990-11-01	1991-10-31	799.2	183.1	
			1991-11-01	1992-10-31	399.2	91.6	
Norcen Energy Resources Limited	GL-115	Emerson, Man.	1989-08-24	1989-10-31	396.6	27.4	1 841.0
			1989-11-01	2001-10-31	396.6	144.5	
	GL-116	Emerson, Man.	1990-05-03	1990-10-31	184.1	33.5	1 034.0
			1990-11-01	1994-10-31	184.1	67.2	
			1994-11-01	2001-10-31	283.3	104.8	
North Canadian Oils Limited	GL-142	Emerson, Man.	1990-11-08	1991-10-31	283.3	101.4	1 068.8
			1991-11-01	2000-10-31	283.3	103.4	
North Canadian Oils Limited	GL-143	Emerson,Man.	1990-11-08	1991-10-31	283.3	101.4	1 068.8
			1991-11-01	2000-10-31	283.3	103.4	
Pan-Alberta Gas Ltd.	GL-95	Emerson, Man. & Niagara Falls, Ont. combined maximum	1987-11-01	1996-10-31	4 332.5	1 581.4	16 604.7
			1996-11-01	1997-10-31	3 249.4	1 186.0	
			1997-11-01	1998-10-31	2 166.2	790.7	
			1998-11-01	1999-10-31	1 083.1	395.4	
		Maximum permitted at Niagara Falls, Ont. as part of combined Emerson/Niagara Falls volumes	1987-11-19	1996-10-31	1 442.7	526.6	
			1996-11-01	1997-10-31	1 082.1	394.9	
			1997-11-01	1998-10-31	721.3	263.3	
			1998-11-01	1999-10-31	360.7	131.7	
	GL-97	Monchy, Sask.	1984-12-20	1985-10-31	24 928.5	7 582.8	75 296.7
			1985-11-01	2001-10-31	24 928.5	8 294.4	
	GL-106	Kingsgate, BC.	1988-11-01	2012-10-31	7 478.6	2 488.3	59 719.2

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991 *(Continued)*

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order From	To	Maximum Volumes Daily (10^3m^3)	Annual (10^6m^3)	Term (10^6m^3)
Pawtucket Power Associates Limited Partnership	GL-149	Iroquois, Ont.	1991-11-01	2006-10-31	362.5	132.4	1 986.0
Poco Petroleums Ltd.	GL-117	Emerson, Man.	1989-08-24	1989-10-31	708.2	48.9	2 843.5
			1989-11-01	2000-10-31	708.2	258.5	
	GL-118	Emerson, Man.	1989-08-24	1989-10-31	708.2	48.9	2 715.3
			1989-11-01	2000-10-31	708.2	258.5	
ProGas Limited	GL-81	Emerson, Man.	1987-11-01	1990-10-31	5 270.0	1 923.5	15 026.7
			1990-11-01	1991-04-30	5 270.0	953.9	
			1991-05-01	1991-10-31	4 561.8	839.4	
			1991-11-01	1996-10-31	4 561.8	1 665.0	
			1996-11-01	1997-10-31	3 244.3	1 184.1	
			1997-11-01	1998-10-31	1 926.8	703.2	
			1998-11-01	1999-10-31	609.3	222.4	
	GL-98	Emerson, Man. & Monchy, Sask. combined maximum	1986-08-13	1986-10-31	9 440.9	2 583.2	35 492.8
			1986-11-01	1987-10-31	7 552.7	2 480.0	
			1987-11-01	2000-10-31	9 440.9	3 100.0	
		Maximum permitted at Monchy, Sask. as part of combined Emerson/Monchy volumes	1986-08-13	1986-10-31	6 797.4	2 480.0	17 746.4
			1986-11-01	1987-10-31	3 776.3	1 240.0	
			1987-11-01	2000-10-31	4 720.4	1 550.0	
	GL-101	Niagara Falls, Ont.	1989-05-01	1989-10-31	1 420.0	260.6	10 340.0
			1989-11-01	2009-10-31	1 420.0	517.0	
	GL-109	Niagara Falls & Iroquois, Ont.	1991-05-01	1991-10-31	708.2	130.3	5 170.0
			1991-11-01	2011-10-31	708.2	258.5	
	GL-129	Niagara Falls,Ont.	1990-07-27	1990-10-31	2 861.1	277.5	15 685.3
			1990-11-01	2005-10-31	2 861.1	1 044.3	
	GL-161	Iroquois, Ont.	Date of 1st deliveries for 18.5-year term		708.2	258.5	4 800.4
Ramarro Resources Inc.	GL-139	Niagara Falls,Ont.	1990-11-08	1991-10-31	169.0	60.5	925.5
			1991-11-01	2005-10-31	169.0	61.7	
Selkirk Cogen Partners, L.P.	GL-157	Iroquois, Ont.	Date of 1st deliveries for 15.5-year term		651.5	237.8	3 685.9
Shell Canada Limited	GL-100	Highwater, Que.	1987-11-01	1998-10-31	1 110.0	300.0	5 900.0
			1998-11-01	1999-03-31	1 110.0	167.6	
		Niagara Falls, Ont.	1987-11-01	1998-10-31	1 390.0	400.0	
			1998-11-01	1999-03-31	1 390.0	209.9	
	GL-119	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 234.0
			1989-11-01	2003-10-31	424.9	155.1	

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991 *(Continued)*

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order From	To	Maximum Volumes Daily (10^3m^3)	Annual (10^6m^3)	Term (10^6m^3)
Shell Canada Limited (continued)	GL-120	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 250.0
			1989-11-01	2004-10-31	424.9	155.1	
	GL-134	Niagara Falls,Ont.	1990-07-27	1990-10-31	450.0	43.6	2 755.0
			1990-11-01	2010-10-31	450.0	145.0	
			2010-11-01	2011-08-31	450.0	95.8	
TransCanada PipeLines Limited	GL-42(d)	Emerson, Man.	1971-04-15	1971-10-31	N/S	232.8	60 316.5
			1971-11-01	1994-10-31	N/S	2 612.3	
	GL-83	Niagara Falls, Ont.	1984-11-01	1986-10-31	1 133.1	414.0	16 371.0
			1986-11-01	2002-10-31	2 620.3	959.0	
			2002-11-01	2003-01-15	2 620.3	199.1	
	GL-84	Niagara Falls, Ont.	1987-11-01	1988-10-31	142.0	51.8	2 378.0
			1988-11-01	1997-10-31	708.0	258.4	
	GL-86	Emerson, Man.	1987-11-01	1990-10-31	2 832.8	1 034.0	10 886.4
			1990-11-01	1991-10-31	2 832.8	1 036.8	
			1991-11-01	1994-10-31	2 832.8	1 034.0	
			1994-11-01	1995-10-31	2 832.8	1 036.8	
			1995-11-01	1996-10-31	2 832.8	1 034.0	
			1996-11-01	1997-10-31	2 188.7	798.9	
			1997-11-01	1998-10-31	1 416.4	517.0	
			1998-11-01	1999-10-31	708.2	259.2	
	GL-87	Emerson, Man.	1987-11-01	1990-10-31	2 832.8	1 034.0	10 886.4
			1990-11-01	1991-10-31	2 832.8	1 036.8	
			1991-11-01	1994-10-31	2 832.8	1 034.0	
			1994-11-01	1995-10-31	2 832.8	1 036.8	
			1995-11-01	1996-10-31	2 832.8	1 034.0	
			1996-11-01	1997-10-31	2 188.7	798.9	
			1997-11-01	1998-10-31	1 416.4	517.0	
			1998-11-01	1999-10-31	708.2	259.2	
	GL-89	Emerson, Man.	1984-11-01	1985-10-31	6 317.1	524.1	12 960.8
			1985-11-01	1986-10-31	6 317.1	1 957.3	
			1986-11-01	1990-10-31	6 317.1	2 096.3	
			1990-11-01	1991-10-31	4 207.2	1 396.1	
			1991-11-01	1992-10-31	2 103.6	698.1	
	GL-110	Niagara Falls & Iroquois, Ont.	1991-05-01	1991-10-31	708.2	130.3	5 443.2
			1991-11-01	2012-10-31	708.2	258.5	
	GL-121	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 326.5
			1989-11-01	2003-10-31	424.9	155.1	
	GL-122	Emerson, Man.	1989-08-24	1989-10-31	424.9	29.3	2 326.5
			1989-11-01	2004-10-31	424.9	155.1	
	GL-135	Gananoque,Ont.	1990-07-27	1990-10-31	1 445.0	140.2	7 910.0
			1990-11-01	2005-10-31	1 445.0	529.0	

C4. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1991 *(Continued)*

Exporter	Licence or Order Number	Point of Export	Term of Licence or Order From	To	Maximum Volumes Daily (10^3m^3)	Annual (10^6m^3)	Term (10^6m^3)
Unigas Corporation	GL-162	Chippawa, Ont.	Date of 1st deliveries for a 10-year term		453.2	165.5	1 654.2
Union Gas Limited	GL-92	Windsor, Ont.	1985-11-01	1990-10-31	1 100.0	284.0	1 703.7
			1990-11-01	1991-10-31	732.6	189.1	
			1991-11-01	1992-10-31	366.3	94.6	
Vector/7 Producers	GL-140	Niagara Falls, Ont.	1990-11-08	1991-10-31	892.3	319.6	5 025.6
			1991-11-01	2005-10-31	892.3	325.8	
Westcoast Energy Marketing Ltd.	GL-131	Huntingdon & Kingsgate,B.C.	1990-08-28	1990-10-31	4 524.8	294.1	23 228.0
			1990-11-01	2004-10-31	4 524.8	1 651.6	
Western Gas Marketing Limited	GL-128	Cornwall,Ont.	1990-07-27	1990-10-31	331.0	32.1	1 820.0
			1990-11-01	2005-10-31	331.0	121.3	
	GL-141	Emerson,Man.	1990-11-08	1991-10-31	424.9	152.1	2 326.5
			1991-11-01	2005-10-31	424.9	155.1	
	GL-163	Niagara Falls, Ont.	Date of 1st deliveries for a 15-year term		283.0	103.7	1 552.0

a - This licence authorizes an export of natural gas at Huntingdon, B.C. for storage in the U.S. and for subsequent import through exchange arrangements with other exporters.
b - This licence authorizes an export of natural gas near Sprague, Manitoba for import near Rainy River, Ont.
c - This licence authorizes the export of natural gas which the licensee has imported near Willow Creek, Sask. pursuant to Licence GLI-5.
d - This licence authorizes an export of natural gas near Emerson, Manitoba for import near Sault Ste-Marie and Sarnia, Ont., to serve the eastern Canadian Market.
N/S Not Specified

C5. Licences and Long-Term Orders to Import Natural Gas as at 31 December 1991

Importer	Licence or Order Number	Point of Import	Term of Licence or Order From	To	Maximum Volumes Daily ($10^3 m^3$)	Annual ($10^6 m^3$)	Term ($10^6 m^3$)
B.C. Gas Inc.	GL-123(a)	Huntingdon, BC.	1989-11-09	1992-04-30	1703.0	61.3	184.0
Canadian Western Natural Gas Company Limited	GO-117-88	Coutts, Alta.	1989-01-01	2005-12-31	30.0	N/S	N/S
Centra Gas Ontario Inc.	GL-130(b)	Rainy River, Ont.	1990-07-27	2005-10-31	640.0	210.0	3 150.0
Centra Gas Transmission Holdings Inc.	GL-30(b)	Rainy River, Ont.	1970-11-01	1995-10-31	1 321.8	344.0	8 498.1
Coastal Gas Marketing Company	GOL-1	Sarnia, Ont.	1991-02-07	2016-02-06	N/S	N/S	N/S
Many Islands Natural Gas (Canada) Limited	GLI-5(c)	Willow Creek, Sask.	1972-03-15	1992-10-31	4 249.2	1 274.8	18 951.3
TransCanada PipeLines Limited	GL-42(d)	Sault Ste. Marie and Sarnia, Ont.	1971-04-15 1971-11-01	1971-10-31 1994-10-31	N/S N/S	232.8 2 612.3	60 316.5
	GOL-2-91(d)	Sault Ste. Marie and Sarnia, Ont.	1991-11-01	2005-10-31	N/S	N/S	N/S
Western Gas Marketing Ltd.	GOL-3-91(b)	Rainy River, Ont.	1991-11-01	1993-10-31	N/S	N/S	N/S

a - This licence authorizes an import of natural gas which the licesee has previously exported for storage in the U.S. The import occurs through exchange arrangements with other exporters.
b - This licence authorizes an import of natural gas which the licensee has exported near Sprague, Man.
c - This licence authorizes an import of natural gas which the licensee will subsequently export near Emerson, Manitoba, pursuant to Licence GL-44.
d - This licence authorizes an import of natural gas which the licensee has previously exported near Emerson, Manitoba. This natural gas serves Canadian markets.
N/S Not specified.

C6. Licences and Long-Term Orders to Export and/or Import Propane, Butanes, Ethane and Ethylene as at 31 December 1991

Exporter	Licence or Order Number	Points of Export	Points of Import	Term of Licence or Order From	Term of Licence or Order To	Maximum Volumes Annual (10^6m^3)	Maximum Volumes Term (10^6m^3)
PROPANE							
Amoco Canada Petroleum Company Ltd. (Export)	GL-32	Can/US Border [a]		1971-01-01	1972-12-31	92 698	4 281 799
				1973-01-01	1973-12-31	569 761	
				1974-01-01	1974-12-31	519 682	
				1975-01-01	1975-12-31	506 190	
				1976-01-01	1976-12-31	483 571	
				1977-01-01	1977-12-31	456 825	
				1978-01-01	1993-12-31	92 698	
				1994-01-01	1994-12-31	77 206	
Dome Petroleum Limited (Export)	GL-31	Can/US Border [a]		1971-01-01	1972-12-31	133 254	9 757 486
				1973-01-01	1973-12-31	924 999	
				1974-01-01	1974-12-31	870 078	
				1975-01-01	1975-12-31	847 301	
				1976-01-01	1976-12-31	812 936	
				1977-01-01	1977-12-31	775 793	
				1978-01-01	1978-12-31	744 761	
				1979-01-01	1979-12-31	716 983	
				1980-01-01	1980-12-31	688 571	
				1981-01-01	1981-12-31	656 190	
				1982-01-01	1982-12-31	620 476	
				1983-01-01	1986-12-31	133 254	
				1987-01-01	1987-12-31	143 809	
				1988-01-01	1988-12-31	193 016	
				1989-01-01	1989-12-31	196 984	
				1990-01-01	1990-12-31	169 047	
				1991-01-01	1991-12-31	165 873	
				1992-01-01	1992-12-31	165 079	
				1993-01-01	1993-12-31	162 098	
				1994-01-01	1994-12-31	103 968	
ETHANE							
Dome Petroleum Limited (Export)	GL-51 [b][c]	Export-Elmore, Sask.	Windsor, Ont.	1979-06-21	1979-12-31	1 287 000	19 069 000
				1980-01-01	1980-12-31	1 090 000	
		Re-Export - Windsor, Ont.		1981-01-01	1981-12-31	935 000	
				1982-01-01	1982-12-31	1 114 000	
				1983-01-01	1983-12-31	1 241 000	
				1984-01-01	1984-12-31	1 424 000	
				1985-01-01	1985-12-31	2 000 000	
				1986-01-01	1986-12-31	2 731 000	
				1987-01-01	1987-12-31	2 304 000	
				1988-01-01	1988-12-31	1 891 000	
				1989-01-01	1989-12-31	1 301 000	
				1990-01-01	1990-12-31	765 000	
				1991-01-01	1991-12-31	602 000	
				1992-01-01	1992-12-31	280 000	
				1993-01-01	1993-12-31	104 000	

C6. Licences and Long-Term Orders to Export and/or Import Propane, Butanes, Ethane and Ethylene as at 31 December 1991 *(Continued)*

Exporter	Licence or Order Number	Points of Export	Points of Import	Term of Licence or Order From	Term of Licence or Order To	Maximum Volumes Annual (m^3)	Maximum Volumes Term (m^3)
ETHYLENE						**Kilograms**	
Dow Chemical of Canada Limited (Export/Import)	EYL-2-76[d]	Elmore, Sask.	Windsor, Ont.	1978-01-01	1997-12-31	181 438 810	N/S

a - For each licence or order the Canada/US Border export points include one or more of the following ports: Elmore, Sask., Gretna, Man., Sarnia and Windsor, Ont.

b - This is an export licence which authorizes the export of ethane at Elmore, Sask., and Windsor, Ont. All or a portion of the quantity of ethane exported at Elmore, Sask., may be imported at Windsor, Ont., for subsequent re-export at Windsor, Ont.

c - Authorized exports of ethane in each year during the period 1982-01-01 to 1985-12-31 shall be reduced by the equivalent quantity of ""make-up"" volumes exported under Licence GL-47 which is in excess of 392 728 m^3.

d - This is an export licence which authorizes the export of ethylene at Elmore, Sask., and at Sarnia and Windsor, Ontario. All or a portion of the quantity of ethylene exported at Elmore, Sask., may be imported at Sarnia and Windsor, Ontario for subsequent re-export at Sarnia and Windsor, Ont.

N/S Not specified

Appendix D

Electricity

D1. Certificates and Orders Issued During 1991 in Respect to International Power Lines

No Certificates or Orders were issued.

D2. Amending Orders Issued During 1991 Relating to International Power Lines

Applicant	Order No.	Issued	Comments
TransAlta Utilities Pipelines Ltd.	AO-2-EC-54	91-07-25	Change in company name

D3. Licences Issued During 1991 Relating to the Export of Electricity

No Licences were issued.

D4. Permits and Orders Issued During 1991 Relating to the Export of Electricity
(a) Orders Issued Pursuant to Section 7 of the Part VI Regulations

No Orders were issued.

D4. Permits and Orders Issued During 1991 Relating to the Export of Electricity *(continued)*
(b) Permits Issued Pursuant to the NEB Act Amended 1 June 1990.

Applicant	Permit No.	Class	Kilowatts	Annual Megawatt Hours	Term From	Term To	Issued
B.C. Hydro	EPE-27	Firm	2 200	1 200	91-12-01	93-09-30	91-09-05
The Canadian Transit Company	EPE-29	Firm	200	50	91-09-01	21-08-31	91-08-22
Detroit and Windsor Subway Company	EPE-26	Firm	400	3 000	91-12-01	21-11-31	91-05-16
Hydro-Québec	EPE-20	Firm	2 000	10 512	91-04-01	21-03-31	91-03-21
Ontario Hydro	EPE-21	Interruptible	-	15 000 000	91-07-31	94-06-30	91-04-24
	EPE-22	Circulating Energy	-	10 000 000	96-01-31	25-12-31	91-04-24
	EPE-23	Firm	112 000	13 200 000	91-07-31	92-10-31	91-04-24
	EPE-24	Firm	3 000	15 000	91-07-31	21-06-30	91-04-24
	EPE-25	Firm	100	200	91-07-31	21-05-31	91-04-24
Manitoba Hydro	EPE-30	Firm	900	7 884 000	91-10-01	94-09-31	91-09-26
N.B. Power	EPE-14	Firm	100 000	876 000	91-02-01	94-10-31	91-01-11
	EPE-15	Interruptible	-	6 482 400	91-02-01	00-10-31	91-01-11
	EPE-16	Interruptible	-	400 000	91-02-01	00-10-31	91-01-11
	EPE-17	Carrier Transfer	50 000	250 000	91-02-01	02-07-31	91-01-11
	EPE-18	Interruptible	-	179 000	91-02-01	00-10-31	91-01-11
	EPE-19	Firm	23 000	201 480	91-02-01	94-10-31	91-01-11
	EPE-28	Firm	1 000	1 000	91-10-21	21-10-20	91-07-11

D4. Permits and Orders Issued During 1991 Relating to the Export of Electricity *(continued)*
(c) Amending Orders Relating to Power and Energy

Applicant	Order No.	Issued	Comments
British Columbia Hydro and Power Authority	AO-5-EL-162	91-07-18	Modification to the term of the licence.
	AO-3-EL-163	91-07-18	Modification to the term of the licence.
	AO-2-EL-164	91-07-18	Modification to the term of the licence.
	AO-6-EL-162	91-11-28	Modification to the term of the licence.
	AO-4-EL-163	91-11-28	Modification to the term of the licence.
	AO-3-EL-164	91-11-28	Modification to the term of the licence.
	AO-1-ELO-251	91-07-13	Amendment increasing the quantity of power and energy
	AO-1-EPE-02	91-07-13	Amendment increasing the quantity of power and energy
Canadian Niagara	AO-1-EPE-08	91-10-24	Amendment increasing the quantity of power and energy
Hydro-Québec	AO-3-EL-169	91-04-18	Amendment authorizing export over any international power and the price to be charged to be that in the Interconnection agreements
N.B. Power	AO-1-EPE-28	91-11-14	Change of company name

D4. Permits and Orders Issued During 1991 Relating to the Export of Electricity *(continued)*
(d) Revoking Orders Issued pursuant to Article 21

Applicant	Order No.	Issued	Comments
Hydro-Québec	RO-ELO-230	91-03-21	Order revoking order ELO-230 effective 21 March, 1991
	RO-ELO-231	91-03-21	Order revoking order ELO-231 effective 21 March, 1991
	RO-ELO-232	91-03-21	Order revoking order ELO-232 effective 21 March, 1991
	RO-ELO-233	91-03-21	Order revoking order ELO-233 effective 21 March, 1991
	RO-ELO-234	91-03-21	Order revoking order ELO-234 effective 21 March, 1991
	RO-ELO-235	91-03-21	Order revoking order ELO-235 effective 21 March, 1991
	RO-ELO-236	91-03-21	Order revoking order ELO-236 effective 21 March, 1991
	RO-ELO-237	91-03-21	Order revoking order ELO-236 effective 21 March, 1991
	RO-EPE-04	91-03-21	Order revoking order EPE-04 effective 21 March, 1991
	RO-EPE-05	91-03-21	Order revoking order EPE-05 effective 21 March, 1991
	RO-EPE-06	91-03-21	Order revoking order EPE-06 effective 21 March, 1991
Ontario Hydro	RO-ELO-273	91-04-24	Order revoking order ELO-273 effective 24 April, 1991

Appendix E

Financial Regulation

E1. Financial Information - Group 1 Oil Pipeline Companies

(a) (b)	Cochin		Interprovincial		IPL(NW)		Trans Mountain		Trans-Northern		
1991	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**Total**
Revenue Requirement											
Return	11.0	36.3	77.9	24.9	39.1	53.8	22.3	25.4	4.6	15.9	154.9
Depreciation	5.2	17.2	42.3	13.5	14.7	20.2	8.3	9.5	2.2	7.5	72.7
Operating & Mtce.	12.7	41.9	136.8	43.7	6.8	9.3	30.0	34.3	18.4	63.3	204.8
Taxes	1.4	4.6	56.1	17.9	12.1	16.7	27.0	30.8	3.9	13.3	100.5
Total	**30.3**	**100.0**	**313.2**	**100.0**	**72.7**	**100.0**	**87.6**	**100.0**	**29.1**	**100.0**	**532.9**
Capitalization of Rate Base (c)											
Debt	N/A(d)	N/A	387.2	59.2	190.8	68.5	81.3	50.0	18.6	46.3	677.9
Preferred	N/A(d)	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common Equity	N/A(d)	N/A	266.9	40.8	87.6	31.5	81.3	50.0	21.6	53.7	457.4
Total	**42.1**	**100.0**	**654.1**	**100.0**	**278.4**	**100.0**	**162.6**	**100.0**	**40.2**	**100.0**	**1177.4**
Return on Common Equity											
Approved	N/A(d,e)	N/A	36.0	13.25	14.1	16.00	11.4	14.00	2.8	13.75	
Actual	11.0(f)	26.99	37.4	14.03	14.1	16.00	13.5	16.60	2.5	12.60	
1990	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**Total**
Revenue Requirement											
Return	11.6	37.4	77.3	25.3	40.3	55.4	18.1	23.6	4.0	15.4	151.3
Depreciation	5.2	16.8	40.4	13.2	14.6	20.1	7.5	9.8	2.1	8.1	69.8
Operating & Mtce.	12.9	41.6	134.1	43.9	5.8	8.0	29.0	37.9	16.5	63.5	198.3
Taxes	1.3	4.2	53.5	17.5	12.0	16.5	22.0	28.7	3.4	13.1	92.2
Total	**31.0**	**100.0**	**305.3**	**100.0**	**72.7**	**100.0**	**76.6**	**100.0**	**26.0**	**100.0**	**511.6**
Capitalization of Rate Base (c)											
Debt	N/A(d)	N/A	384.0	60.1	201.2	69.5	77.1	50.0	17.1	44.9	679.4
Preferred	N/A(d)	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common Equity	N/A(d)	N/A	254.8	39.9	88.4	30.5	77.0	50.0	21.0	55.1	441.2
Total	**45.3**	**100.0**	**638.8**	**100.0**	**289.6**	**100.0**	**154.1**	**100.0**	**38.1**	**100.0**	**1165.9**
Return on Common Equity											
Approved	N/A(d,e)	N/A	33.8	13.25	14.1	16.00	10.8	14.00	2.9	13.75	
Actual	11.6(f)	25.50	36.6	14.37	14.1	16.00	9.9	12.80	2.1	9.97	

a - Data based on preliminary estimates.
b - Full names of companies are listed on page 117, Appendix A1.
c - Data exclude construction work in progress.
d - Not applicable because company is financed on a joint venture basis.
e - Not applicable because company regulated on a complaint basis.
f - Before interest and taxes.

E2. Financial Information - Group 1 Gas Pipeline Companies

(a) (b)	Alberta Natural Gas		Foothills		TQM		TransCanada		Westcoast		
1991	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**Total**
Revenue Requirement											
Return	3.2	11.5	67.4	40.0	46.1	61.9	417.6	34.1	107.6	35.3	641.9
Depreciation	1.4	4.9	19.7	11.7	13.2	17.7	138.7	11.3	32.1	10.6	205.1
Operating & Mtce.	21.3	75.1	52.1	30.9	6.8	9.1	527.8	43.1	108.8	35.8	716.8
Taxes	2.4	8.6	29.3	17.4	8.5	11.4	140.0	11.4	55.9	18.4	236.0
Total	**28.3**	**100.0**	**168.4**	**100.0**	**74.4**	**100.0**	**1,224.2**	**100.0**	**304.4**	**100.0**	**1,799.8**
Capitalization of Rate Base (c)											
Debt	17.4	65.0	396.8	56.9	259.4	75.0	2,180.0	59.1	555.5	61.5	3,409.2
Preferred	0.0	0.0	123.9	17.8	0.0	0.0	402.1	10.9	31.8	3.5	557.8
Common Equity	9.4	35.0	176.1	25.3	86.5	25.0	1,106.6	30.0	316.2	35.0	1,694.8
Total	**26.7**	**100.0**	**696.9**	**100.0**	**345.9**	**100.0**	**3,688.7**	**100.0**	**903.6**	**100.0**	**5,661.8**
Return on Common Equity											
Approved	N/A(d)	N/A	25.1	14.25	11.9	13.75	149.9	13.50	42.2	13.75	
Actual	1.3	13.38	25.1	14.25	12.5	14.44	150.6	13.61	42.9	13.65	
1991	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**($000 000)**	**(%)**	**Total**
Revenue Requirement											
Return	2.6	9.2	76.4	46.6	47.6	68.6	365.5	37.5	95.4	32.8	587.5
Depreciation	1.2	4.2	18.5	11.3	13.1	18.9	118.2	12.1	30.8	10.6	181.8
Operating & Mtce.	22.0	77.7	41.2	25.1	6.4	9.2	363.7	37.3	101.1	34.7	534.4
Taxes	2.5	8.8	27.9	17.0	2.3	3.3	128.0	13.1	63.9	21.9	224.6
Total	**28.3**	**100.0**	**164.0**	**100.0**	**69.4**	**100.0**	**975.4**	**100.0**	**291.2**	**100.0**	**1,528.3**
Capitalization of Rate Base (c)											
Debt	12.9	65.2	398.4	69.4	267.8	75.0	1,798.6	59.7	506.4	61.0	2,984.1
Preferred	0.0	0.0	0.0	0.0	0.0	0.0	309.6	10.3	33.2	4.0	342.8
Common Equity	6.9	34.8	176.0	30.6	89.3	25.0	903.5	30.0	290.5	35.0	1,466.2
Total	**19.8**	**100.0**	**574.4**	**100.0**	**357.1**	**100.0**	**3,011.7**	**100.0**	**830.1**	**100.0**	**4,793.1**
Return on Common Equity											
Approved	N/A(d)	N/A	25.1	14.25	12.3	13.75	119.7	13.25	39.9	13.75	
Actual	1.0	12.17	25.1	14.25	13.3	14.87	120.6	13.35	38.0	13.07	

a - Based on preliminary estimates.
b - Full names of companies are listed on page 117, Appendix A1.
c - Excludes construction work in progress.
d - Not applicable as company is regulated on a complaint basis.

Appendix F

Metric Conversion Tables

The **National Energy Board** uses the International System of Units (SI). The energy units most commonly referred to in this report are the gigajoule (GJ) and the petajoule (PJ). A 30-litre gasoline fill-up contains about one gigajoule of energy. A petajoule is one million gigajoules. On average, a city the size of Toronto uses a petajoule of energy for all uses (heat,light, transportation, etc.) about every 15 hours.

The following conversion tables is provided for the convenience of readers who may be more familiar with the Imperial System.

Approximate Conversion Factor

metre (m)	=	3.28 feet
kilometre (km)	=	0.62 mile
millimetre (mm)	=	0.039 inch
cubic metre (m^3) of oil	=	6.3 barrels
cubic metre (m^3) of natural gas	=	35.3 cubic feet
litre (L)	=	0.22 Imperial gallon
kilogram (kg)	=	2.20 pounds
gigajoule (GJ)	=	0.95 thousand cubic feet of natural gas at 1000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
petajoule (PJ)	=	one million gigajoules

Abbreviations

gigajoule (GJ)	=	10^9 J
terajoule (TJ)	=	10^{12} J
petajoule (PJ)	=	10^{15} J
exajoule (EJ)	=	10^{18} J
kilowatt (KW)	=	10^3 watts
megawatt (NW)	=	10^3 KW
megawatt hour (MW.h)	=	10^3 KW.h
gigawatt hour (GW.h)	=	10^6 KW.h
terawatt hour (TW.h)	=	10^9 KW.h

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